HISTORICAL CHANGES IN ELDERLY COHORTS' ATTITUDES TOWARD MENTAL HEALTH SERVICES

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Older adults' attitudes toward mental health services have received little research attention. Overall, older adults are thought to hold relatively negative attitudes. In this study, Analysis 1 investigated historical shifts in attitudes toward mental health services among three independent samples of older adults, separated by 14-year and 9-year intervals (1977 sample, N = 90; 1991 sample, N = 101; 2000 sample, N = 99). Analysis 2 compared two samples of older and younger adults, each separated by a 9-year interval (Older Adults: 1991 sample, N = 93; 2000 sample, N = 91 and Younger Adults: 1991 sample, N = 131; 2000 sample, N = 147). Participants completed a questionnaire containing five, internally consistent scales assessing multiple dimensions of mental health attitudes (Openness, Biases, Range of Knowledge, Breadth, Help Seeking Attitudes). Analyses suggested that the 1991 and 2000 samples of older adults had more positive attitudes than did the 1977 sample. However, a sustained trend for more positive attitudes beyond 1991 was not seen. In fact, no differences existed between 1991 and 2000 samples with exception of

two. Older and younger adults together had lower Biases and Breadth scores in 2000 than in 1991. Age effects, gender effects, and interactions were also examined. Possible historical influences were discussed along with implications for the delivery of mental health care to future cohorts of older adults.

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CHAPTER 1

INTRODUCTION

For over half a century, researchers have investigated the public's attitudes toward psychologists. The elusive relationship between attitude toward and utilization of mental health services as well as the increasing variety of mental health providers available to the public continue to drive these inquiries. Sadly, certain populations have received only minimal attention in this area, and thus, little is known about the nature of their attitudes. One such group is older adults. Dramatic demographic changes are prompting increases in research attention toward this population. The population of those aged 65 and over, having already begun to increase rapidly, is about to swell in tremendous proportion during the coming decades (Hayslip & Panek, 1993; U.S. Bureau of Census, 1999). Koenig, George, and Schneider (1994) point out that in the year 2020 the "baby boom" cohort will exceed 55 million as its constituents reach their 65th birthday, testing the availability and resources of providers across all types of services for elderly persons, including mental health services (Demmler, 1998). Klerman and Weissman (1989) suggest that members of this cohort have much higher rates

of psychological disorders, such as depression, anxiety, and substance abuse, than the present cohort of older adults. Thus, if their current pattern of need remains high over time, the future elderly will demand a far greater amount of mental health care. How will the attitudes of this cohort toward mental health services impact the foreseeable increase in demand? A starting point for developing answers to this question is to examine the attitudes of past and present elderly cohorts and how such attitudes have changed.

Older Adults and Mental Health

Most of what is known about older adults and mental health depicts a relationship with much room for improvement. There is a significant disparity between elderly persons' level of need for and their rate of utilization of mental health services. During the mid 1980s, when 10% of the population was age 65 and over, approximately 5% of clients seen in community mental health centers were in that age group (Lasoski, 1986). A contributing factor to the disparity was a general lack of awareness on the part of older adults of the mental health services available in the community (Smyer & Pruchno, 1984). Greater age brings even more problems as the

disparity between need and utilization increases with age wherein age is inversely predictive of seeking mental health resources (Shapiro, 1986). Hayslip, Ritter, Oltman, and McDonnell (1980) reported that a majority of older adults sampled did not view mental health as an important need. Many older adults are under the belief that Alzheimer's disease, depression, and other mental health concerns are merely part of normal aging (Gatz & Pearson, 1988). In a telephone study of over 1300 adults, one-fourth of older adults stated they would not seek mental health care even if it were needed (Mickus, Colenda, & Hogan, 2000). When presented with a psychological problem in vignette form, nearly half of older participants recruited for a study of utilization of mental health services indicated they would seek help from within their social network, while only a fraction would go directly to a mental health professional (Ray, Raciti, & MacLean, 1992). Furthermore, of the estimated 15-25% of elderly persons with demonstrable mental illness symptoms, a large portion of those who actually do receive attention for their concerns receive it from their primary care physicians (Lasoski; Philips & Murrell, 1994; Shapiro). An investigation of the sociodemographic characteristics of

mental health service users (Gallo, Marino, Ford, & Anthony, 1995) did not find a difference in reported contact with mental health professionals between those over age 65 and younger adults.

A recent study found that a majority of adults, particularly older adults, would initially seek out their PCP for mental health care (Mickus et al., 2000). Shapiro (1986) gathered data on older adults' use of psychological services, suggesting mental health problems are often only brought to the attention of primary care physicians during health care visits for needs other than mental health issues. Shapiro's data indicated that of those age 65 and over in need of mental health care, only 40% received it. Not surprising, those elderly persons who have seen mental health professionals in the past hold more positive opinions of them and are more likely to utilize their services again when compared with those who have not had that experience (Deane & Todd, 1996; Speer, Williams, West, & Dupree, 1991).

Barriers to Older Adults' Use of Mental Health Resources

For older adults, health care utilization depends on the interplay of numerous factors including physical health, mental health, attitudes, and social factors

(Linden, Horgas, Gilberg, & Steinhagen-Thiessen, 1997). In light of the underutilization of mental health services by elderly persons, it is relevant to consider the barriers that may influence attitudes and hinder a higher level of utilization. Research suggests a variety of barriers, both real and perceived, play a role in utilization of mental health services. The perceptions of mental health professionals and general practitioners, who may be influenced by training, research, and financial issues, are part of the equation. Additionally, many barriers perceived by older adults have been shown to influence utilization.

Mental health professionals themselves may present a significant barrier to older adults. Lasoski (1986) traces several such barriers in his analysis of utilization rates among the elderly population. Many professionals are reluctant to pursue training in counseling older adults, and, it follows, many are also reluctant to accept elderly clients. According to Lasoski, this reluctance may be based on some of the following assumptions: elderly persons have irreparable symptoms, they are reluctant to change, and their problems are too complex to be effectively treated. Other influential factors may include: anxiety within the therapist regarding aging, death, and relationships with

parents; a low status attached to working with elderly clients; and the attitude that investment in therapy for someone who may not have very many years of life left is not worth the effort (Goodstein, 1982; Lasoski). Older adults who are part of minority groups face additional professional barriers stemming from negative attitudes toward minorities (Biegel, Farkas, & Song, 1997). Lasoski pointed to the prevalence of primary physicians receiving the bulk of mental health complaints from elderly patients as a problem. Primary care physicians are less likely to refer elderly patients in need of mental health attention to mental health professionals than they are for younger adults who report similar problems (Gatz & Smyer, 1992; Goldstrom et al., 1987; Stotsky, 1972). Utilization of mental health services is low even when an appropriate diagnosis is made (Goldstrom et al.), regardless of the severity of the need (Smyer & Pruchno, 1984). Exacerbating this problem is the report that, for older adults, the most important factor in increasing their likelihood to see a mental health professional is the recommendation of their primary care physician (Estes, 1995). When an appropriate referral is withheld, adults over age 65 are much less likely than younger populations to make needed contact with

mental health professionals (Gallo et al., 1995). Reluctance on the part of general practitioners to make mental health referrals may stem from a fear of offending patients and family members (Lasoski). A more likely reason, according to Lasoski, is that many mental and physical problems are closely related in elderly populations, thus leading to the bias that the general practitioner alone should be responsible for providing care for those individuals. More positively, Hillman, Stricker, and Zweig (1997) suggest that psychologists are increasingly becoming cognizant and comfortable with gerontological issues. Nonetheless, these researchers maintain that psychologists continue to struggle to recognize the importance of age-related issues in the mental health of older adults.

On the institutional level, a lack of adequate training opportunities has been cited as a reason for the relatively low number of mental health professionals specialized for care of elderly clients (Ford & Sbordone, 1980). Moreover, a lack of research into the effectiveness of psychotherapy with older adults leads to an underpromotion among professionals of treating older adults (Lasoski, 1986). Financial reasons also deter many mental

health care professionals from seeing elderly clients. Older persons have traditionally been viewed as unattractive clients due to their difficulty in paying and the low Medicare allowable fee (Biegel et al., 1997; Koenig et al., 1994; Shapiro, 1986). Koenig et al. indicate psychologists or psychiatrists who see Medicare patients lose up to 50% of their normal fee. Furthermore, they cite a trend among new practitioners of limiting or eliminating their number of elderly clients. Thus, as need for mental health services increases, resources may remain stagnant or decrease.

There are also many barriers perceived by older adults themselves. These perceived barriers may serve to limit their use of mental health resources. In his investigation of the barriers behind the unmet need among older adults, Shapiro (1986) pointed to problems of affordability, transportation difficulties, inconvenience, and lack of information about available resources. However, due to conflicting research findings, the degree to which perceived barriers actually prevent older adults from seeking mental health services is unclear. Several researches agree with Shapiro that perceived barriers serve to reduce utilization rates (Goldstrom et al., 1987;

Lasoski, 1986; Woodruff, Donnan, & Halpin, 1988). However, a study comparing the utilization rates of Israeli elderly persons, among whom cost was not a factor affecting access to mental health resources, with that of older US adults, found cost not predictive of utilization. Rather, US older adults, who were relatively more financially responsible for services, had a higher utilization rate (Feinson & Popper, 1995). Likewise, Mitchell (1995) determined that access barriers were not significant deterrents to elderly persons when a legitimate need for mental health services existed. Thus, the relationship between perceived barriers and utilization is not clear. Yet, the disparity between need for and use of psychological services among older adults remains (Shapiro). Clearly, other factors are involved. Researchers who compared the Israeli and US older adults suggest that a culturally based difference in stigma attached to seeking mental health services kept the utilization rate low among the Israeli population. Lasoski points to a pattern whereby older adults reduce their utilization rates of mental health services because they are less willing to seek help from any professionals as symptoms become less medically related and more psychological in nature. Thus, it will be necessary to look

further at the factors related to older adults and mental health services.

Older Adults' Attitudes Toward Mental Health

Perhaps the most significant barrier to the meeting of mental health needs for older adults is their own attitudes (Rave & Meyers, 1997). Indeed, most health related behaviors are controlled to a significant extent by attitudes (Finlay, Trafimow, & Jones, 1997). This is true for older adults as well as the general population (Noelker et al., 1998). In their effort to predict intent to use mental health services by participants of all ages, Deane and Todd (1996) concluded that negative attitudes and fear make a significant contribution to treatment avoidance. Biegel et al. (1997) drew similar conclusions for African-American and Hispanic samples. It will be important, then, to consider the prevalence and content of attitudes by elderly persons in particular toward mental health services and utilization. Lasoski (1986) provides some perspective on this issue by pointing out that when dealing with this topic, one is often dealing with attitudes that are at least a half-century old.

There is relatively little data describing how attitudes toward mental health services differ across age

groups. Existing research describing older adults' attitudes presents an inconsistent picture. For example, Lundervold and Young (1992) found older adults generally have negative attitudes toward psychological services as well as significant knowledge deficits in this area. Lebowitz and Niederehe (1992) propose that negative stigma toward mental health is particularly strong among elderly persons who often associate personal failure and spiritual inadequacy with mental disorders. Other researchers have drawn similar conclusions (Blank, 1977; Lasoski, 1986; Woodruff et al., 1988). Finally, elderly persons with diagnosable psychiatric disturbances have even stronger negative attitudes than normals (Lehtinen & Väisänen, 1978). Other investigations have drawn more positive conclusions about the views of mental health services by elderly persons (Lasoski & Thelen, 1987; Speer et al., 1991). It has been shown that those who have received psychological services have less fear of mental health services, hold more positive attitudes, and are more likely to seek help for their future problems when compared to those who have never received mental health care (Deane & Todd, 1996; Furnham & Andrew, 1996; Speer et al.). Still, other research indicated that even while those who had

experienced psychotherapy held positive attitudes, they were less optimistic about the potential benefits of such treatment than were those who had never sought mental health services (Furnham & Wardley, 1990). It should also be noted that middle age adults have demonstrated a stronger belief that elderly persons avoid using mental health services because of stigma than older adults believe of themselves (Lasoski & Thelen).

Within the domain of attitudes held by older adults there is a wide range of attitudinal content. According to Woodruff et al. (1988) some elderly persons believe all mental health treatment occurs in insane asylums or that only the severely mentally ill obtain such treatment. Similarly, Lasoski (1986) suggests that some older adults perceive all psychological treatment as custodial or operating on an inpatient basis. Thus, it appears many may fear being hospitalized were they to bring their problems to the attention of health care professionals. Ray et al. (1992) concluded that older adults are more apt to blame themselves for their psychological problems than for medical problems. Perhaps this self-blame partly explains why older adults will more readily talk about heart problems and other physical symptoms with health

professionals than mental health concerns with mental health care providers (Waxman, Carner, & Klein, 1984). An additional explanation stems from the finding that some elderly persons view mental illness symptoms as normal patterns of aging and, thus, not worthy of reporting to a health care provider (Gatz & Pearson, 1988; Shapiro, 1986). Finally, research has shown that even the wording used to describe psychological services and service providers has an impact on the attitudes attributed to those services by older adults. Descriptions using "counseling" are preferred over those containing the word "mental" (Speer et al., 1991).

There are a variety of possible reasons for the attitudes held by older persons toward mental health issues. A lack of information about mental health services and what can be treated by mental health professionals is thought to contribute to negative attitudes (Gatz & Pearson, 1988; Woodruff et al., 1988). Blank (1977) suggested that elderly persons' fear of loss of control and of being institutionalized might threaten their sense of integration and independence. These feelings may be exacerbated when the issues involved are memory problems or loss of caretakers. Although it has been shown that older

adults are able to recognize common mental illness symptoms (Lasoski, 1986), the majority of them do not view mental health as an important need (Coward, 1979). Lasoski listed several other possible reasons for negative attitudes including fear of identifying a bad problem, feeling unworthy of being helped, and being unwilling to think of themselves as needing help. Many in the older population were middle-aged before the concept of mental health and deinstitutionalization became prevalent, thus they may be maintaining an outdated and inaccurate image of psychological care (Lasoski; Woodruff et al.).

The literature on older adults' attitudes toward mental health suggests a range of postures from positive to negative, a variety of beliefs comprising the attitudes, and several possible rationales for them. The traditional view has been that older adults maintain particularly negative attitudes. To develop a more complete picture of their attitudes, it will be helpful to consider how cohort membership influences attitudes. Before moving to these issues, however, a discussion of the assessment of attitudes is in order.

Assessing Attitudes

In addition to questions that directly assess professional and mental health biases and those that assess one’s openness toward seeking mental health services, two other elements of older adults' relationship to mental health may be useful in assessing attitudes. Knowledge of the range of problems and situations for which psychological services may be helpful can impact attitudes as well as the recognition of need (Breckenridge, Zeiss, Breckenridge, Gallagher, & Thompson, 1985; Roy & Storandt, 1989). Gray (1993) demonstrated that greater knowledge about the mental health profession was related to more positive attitudes about seeking mental health services. This direct relationship supports conclusions drawn by other researchers (Goldstrom et al., 1987; Gray, Hayslip, Schneider, & Guarnaccia, 1994; Lasoski & Thelen, 1987; Waxman et al., 1984).

Breadth of conceptions of the causes of mental illness may also have an influence on attitudes. Research suggests the way people think about the causes of mental illness can influence their attitudes toward seeking mental health services (Hall & Tucker, 1985; Karuza, Zevon, Gleason, Karuza, & Nash, 1990). For example, those who view mental

health problems as inherited and unchangeable conditions may hold a more negative view toward getting help than those who believe that problems may arise for a variety of reasons. In 1993 Gray determined that breadth of conceptions was indirectly related to attitudes of older adults toward seeking mental health services.

It is helpful to consider attitude from several vantage points (e.g., openness, breadth of conceptions, etc.) because as a construct it is multidimensional and wide-ranging (Eagly & Chaiken, 1993). Furthermore, there are many factors related to attitude that influence the action to utilize mental health services or, conversely, the decision to not utilize them. For instance, a British study found greater severity of somatisization of emotional distress to be related to more negative attitudes toward seeking mental health treatment (Furnham & Andrew, 1996). The Health Belief Model (HBM) as described by Rosenstock, Strecher, and Becker (1988) hypothesizes that health-related actions occur as a result of the influence of several factors including: motivation, perception of vulnerability, belief that taking action would be beneficial, and perceived barriers. Likewise, Gurin, Veroff, and Feld (1960) suggest the process one goes

through before seeking mental health services has three stages. The first stage involves identifying a problem as psychological in nature. Making such a designation may involve one's breadth of conceptions of the causes of mental illness. One’s range of knowledge of those problems that can be addressed with the help of a psychologist would also be important at the first stage. Gurin et al. found that at this stage older adults were less likely than younger adults to label a problem as "psychological." The second stage involves deciding whether or not to seek help. During this stage, attitudes regarding efficacy, barriers, and openness to help seeking may be influential. Finally, the third stage involves deciding whether to see a professional mental health provider or to utilize a different source of help, such as a medical doctor or a pastor. This last stage may involve attitudes related to professional and mental health biases and knowledge of the range of problems addressed by mental health professionals. These theories (Gurin et al.; Rosenstock et al.) serve as tools for conceptualizing multidimensional constructs, such as attitudes toward and utilization of mental health services, in an orderly and integrated fashion.

Comparing Younger and Older Adults' Attitudes

In order to understand more fully data pertaining to older adults, it will be helpful to review first what is known generally about public attitude toward mental health, then about younger adults' attitudes more specifically, and finally about how the attitudes of younger and older groups compare.

Guest's 1948 report of generally favorable attitude toward psychologists has been supported by similar surveys across the decades (Furnham & Wardley, 1990; McGuire & Borowy, 1979; Webb & Speer, 1985; Wood, Jones, & Benjamin, 1986). Focus groups conducted by the APA as part of their public education campaign expressed positive overall attitudes toward psychologists (Farberman, 1997). Still, the general public holds more favorable attitudes toward the "hard" sciences, such as biology, chemistry, and physics, than for the "soft" sciences including psychology, sociology, and economics (Janda, England, Lovejoy, & Drury, 1998). Moreover, according to Wood et al., when asked specific questions about mental health care issues, participants tend to reveal significantly more negative opinions than when asked general questions. It was suggested that many negative attitudes are related to lack

of knowledge about the mental health field. Indeed, Farberman reported, following intensive marketing and education campaigns in Denver, Colorado, and Hartford, Connecticut, carried out by the APA, referrals for mental health services increased dramatically.

Younger adults have traditionally been viewed as having more positive attitudes toward mental health and being more open minded about seeking mental health services. According to Cepeda-Benito and Short (1998), favorable attitudes among younger adults is linked to a greater perceived likelihood of seeking psychotherapy. Students who were about to receive mental health counseling expressed less fear of psychological services than students not planning to receive services (Kushner & Sher, 1989). In a study comparing younger and older adults' attitudes toward health care in general, the younger sample demonstrated more positive attitudes (Thorson & Powell, 1991). Similarly, discomfort with mental health issues was shown to be more prevalent among non-urban samples and among older adult samples (Farberman, 1997). Researchers in Greece found younger adults held more positive attitudes towards mental illness than did older adults (Madianos, Economou, Hatjiandreou, Papageorgiou, & Rogakou, 1999).

Older British adults were found to be more skeptical of the potential benefits of psychotherapy than younger adults (Furnham & Wardley, 1990). Another study from Great Britain found that, while both older and younger medical patients had attitudinal barriers to seeking treatment for depression, older adults were less likely to acknowledge depressive symptoms and were less willing to seek treatment (Allen, Walker, Shergill, D'ath, & Katona, 1998). A study by Coursey, Farrell, and Zahniser (1991) found that younger adults with chronic mental illness had positive attitudes toward therapists and psychotherapy. This is not the case for older adults with mental illness (Lehtinen & Väisänen, 1978).

Beyond attitudes, young and old samples differ in their approach to health care utilization. Spitzer, Bar-Tal, and Ziv (1996) suggest younger adults seek the maximum degree of relief from their symptoms with a minimum of self-effort, while older adults prefer to maximize the degree of their own independence in relation to their health problems. Among seriously mentally ill patients, older adults expressed less desire to improve their current life situation than did younger adults (Horwitz & Uttaro, 1998). These researchers also found that older patients

received fewer services from mental health professionals than their younger counterparts. According to Demmler (1998) utilization rates for outpatient mental health services by older adults have increased from 1988 to 1994. However, the increase has been less dramatic for older adults than for younger adults. Differences have even been found among subgroups of older adults. Moen (1978) found the "younger elderly" (age 60 - 75) less reluctant than "older elderly" (age 75 and over) to accept a variety of helping resources. It was suggested the differences between these groups might have been due to cohort effects. Perhaps such cohort effects are reflected in Kahn's (1975) statement that receiving mental health treatment is perceived as a status symbol for younger generations and a disgrace for older generations.

Supporting this phenomenon are responses to a questionnaire by Murstein and Fontaine (1993) indicating that younger respondents would be more comfortable seeking help from a psychologically trained professional than would older respondents. The classic work of Gurin, Veroff, and Feld (1960) determined that those who are younger and better educated are more likely to obtain psychological services. Similarly, Madianos et al. (1999) found that

those with more education were more likely to have positive attitudes about mental illness. Gray (1993) considered the influence of many variables on the attitudes of young and old adults toward seeking mental health services. The data suggested that while some variables impact these populations similarly, several other variables impact the groups differently. Gray determined that knowledge about mental illness and income both had direct impact on the attitudes of younger adults but not for older adults. The attitudes of the older group were shown to be heavily influenced by previous use of psychological services and by gender. These findings represent many of the differences in attitudes toward seeking psychological services between young and old populations at a given time over the past 25 years. Care must be taken when analyzing cross-sectional data that differences between age groups not be attributed to cohort differences, as it is possible they are the result of maturational changes. However, researchers have suggested that patterns of health care ratings, attitudes, and usage, including mental health, remain relatively stable across time (Idler, 1993; Lebowitz & Niederehe, 1992; Thorson & Powell, 1991; Wolinsky, 1990). Thus, it is possible these cross-sectional findings reflect cohort

differences. Now a look at the research on cohort changes across the second half of this century is in order.

Cohort Differences

Few studies have taken up the question of cohort differences in attitudes. In 1999 Madianos et al. reported on two samples of adults measured in Athens, Greece, one in 1979 and the other in 1994. They found that the 1994 sample had better knowledge of the etiology of mental illness than the earlier sample. Veroff, Kulka, and Douvan (1981) reported the results of a 20-year time-lagged analysis of attitudes toward and utilization of mental health care among older adults. These researchers hypothesized that knowledge of and use of mental health professionals would increase between a cohort questioned in 1957 to one questioned in 1976. Their findings demonstrated an increase in utilization between cohorts. As a tool to glean information about attitudes toward receiving mental health services, Veroff et al. asked participants a hypothetical question concerning "personal problems." In 1957, 23% of those age 55 and older spontaneously mentioned a professional help source in their response. In 1976, the same age respondents referred to a professional help source in 40% of their responses. Actual utilization of mental

health services also saw increases among older adults between the 1957 and 1976 samples. For adults ages 50 to 59 utilization increased from 11% in 1957 to 26% in 1976. For those age 60 to 64, the increase was more dramatic, 5% to 19%. Finally, adults over the age of 64 had an increase in utilization from 7% to 13%. Although they did not assess attitudes directly, these researchers concluded that the changes seen in responses to these and other questions reflect a change in attitudes toward mental health and psychological services. They suggested these attitude changes represent an increase in the psychological orientation to understanding of the behavior of the self. Veroff et al. concluded that differences between those interviewed in 1957 and in 1976 are a function of the era in which they were born and reared. According to Hayslip and Panek (1993) these results suggest an increasing openness toward seeking psychological help and they predict this trend will continue among future cohorts of older adults.

The findings of Currin, Hayslip, Schneider, and Kooken (1998) generally support those of Veroff et al. and together point to a trend of improving attitudes toward mental health services among successive samples of older

adults across a span of more than three decades, ending in the early 1990s. In their study of two samples of older adults, one measured in 1977 and the other in 1991, Currin et al. concluded that the later sample had more positive attitudes in several aspects of comparison. It appears the later sample was more flexible in its thinking about the etiology of mental illness, included a broader range of possible problems appropriate for treatment by a mental health professional, and reported a willingness to see a mental health professional for a greater variety of issues. Additionally, when controlling for age, education, income, and health, the 1991 sample held fewer negative biases toward mental health issues than the earlier sample. The researchers concluded that cultural and historical forces impacted the samples in such a way as to affect change in attitude.

A number of such forces have been offered to explain the differences. In accounting for the differences between their 1957 and 1976 samples, Veroff et al. (1981) implicate the emergence of and increasing acceptance of science and technology, including communication, transportation, and media. Many other researchers offer additional historical explanations. Butler and Lewis (1970) believed those

elderly persons who came of age during the Depression of the 1930s are more likely to adhere to the ethic of "rugged individualism," in their quest for individualism and their striving to overcome personal limitations. These individuals matured during a time when mental illness, sharply stigmatized and rejected, carried with it a heavy burden of guilt, and with that the enduring tendency for older adults to blame themselves for mental health problems (Ray et al., 1992). Moen (1978) suggests that the reluctance of many of the elderly persons she interviewed to accept and use helpful services was a result of their own perception of deprivation. While appearing to be in need, many of these older adults were better off at that point in their life than at any previous time and, thus, did not feel it was appropriate to accept help for their problems.

Older adults' relationship to the modern mental health movement is another important historical factor to consider. Many researchers highlight these relationships when describing the attitudes of this population. Those born between 1900 and 1925 became adults before the mental health movement began and, thus, may be less familiar with today's conception of outpatient mental health treatment

and the relative infrequency of institutionalization (Gatz & Smyer, 1992). Similarly, Lasoski and Thelen (1987) suggest that many elderly persons may not be aware of the trend toward deinstitutionalization. According to Woodruff et al. (1988) some older adults believe mental health treatment occurs only in an insane asylum or that only the mentally ill seek such help.

Due to lengthy time requirements involved with studying cohort differences, little research has been carried out about their effects on attitudinal shifts. Nonetheless, many researchers in addition to Veroff et al. (1981) propose that cohort differences are important when considering attitudes toward seeking mental health services (Gatz & Smyer, 1992; Goldstrom et al., 1987; Gray, 1993; Idler, 1993; Lasoski, 1986; Lasoski & Thelen, 1987; Ray et al., 1992; Thorson & Powell, 1991; Woodruff et al., 1988).

Researchers are predicting an enormous increase in the need for mental health services among the elderly population during the next quarter century (Koenig et al., 1994). Thus, the impact of changes across cohorts in attitudes toward mental health services and usage thereof is becoming increasingly important. Gatz and Smyer (1992) predict that, while many of the oldest groups of the

present old have misconceptions about the mental health system, particularly in relation to the current prevalence of outpatient services, the future old will have a more accurate understanding. Gatz and Smyer believe these groups will have greater mental health care needs than today's older adults. The combination of a more positive attitude toward psychological services and an increased need will lead, according to Gatz and Smyer, to a greater demand for mental health services by elderly populations. Other scholars agree, noting a historical shift toward psychological mindedness and professional help-seeking among older adults (Hayslip & Panek, 1993; Zarit & Knight, 1996). Some factors contributing to this shift may include greater education, affluence, and knowledge of mental health services (Lebowitz & Niederehe, 1992). Moen (1978) concludes that social and economic trends initiated in the 1930s will continue to bring new cohorts of older adults into a more accepting role of assistance from others. According to Moen, as standard of living, education level, and political involvement increase, so will elderly persons' demand for services and assistance. Lebowitz and Niederehe suggest that studies focused on forming predictions about the mental health characteristics of

older populations of the near future are needed. To this point it appears that what has been previously described as an antagonistic relationship between older adults and the mental health system (Blank, 1977; Deane & Todd, 1996; Kramer, Taube, & Redick, 1973; Lasoski, 1986; Lundervold & Young, 1992; Mensh, 1973; Ray et al., 1992; Shapiro, 1986) is improving (Currin et al., 1998).

Statement of Problem

Previous research has highlighted historical effects on attitudes toward and utilization of mental health services (Currin et al. 1998; Veroff et al. 1981). However, several questions remain. Will the emergence of increasingly positive attitudes among older adults continue? What interactions among cohort, age, and gender exist? Are the changes in attitude identified by Currin et al. and Veroff et al. particular to older adults in nature and degree? Or, are they a reflection of a larger cultural shift common to all adults? Regardless, there is a pressing need to understand the nature of such changes at present and in the future so mental health professionals can be aware of attitudinal trends. This knowledge could be helpful for addressing current issues between mental health and elderly persons and for aiding in planning and

predicting the near future of mental health and older adults. Therefore, in order to improve current services for older adults and to be prepared to meet their mental health needs in the coming decades, attitude changes need continued tracking.

The present study examined data collected in 1977, 1991, and 2000 from three successive samples of older adults and data collected in 1991 and 2000 from two samples of younger adults. The three samples of older adults were studied in Analysis 1, while only the 1991 and 2000 samples of older and younger adults were investigated in Analysis 2. Thus, the primary purpose of this study is to test for differences in attitudes toward mental health and mental health services between elderly samples measured at three points over the past two decades. The secondary purpose of this study is to investigate age and cohort differences between younger and older adults. Additional aims of this study are to observe the impact of gender on attitudes and explore any interactions among cohort, age, and gender.

Hypotheses

Analysis 1

Cohort/Historical Effects

Generally speaking, cohort differences were

hypothesized to be related to mental health attitudes. More specifically, later samples were predicted to: 1) be more open to the possibility of seeking mental health services than earlier samples, 2) have greater knowledge of the range of problems addressed by mental health professionals than earlier samples, and 3) have greater breadth of conceptions of the causes of mental illness than earlier samples. Additionally, the 2000 sample was predicted to: 4) have more positive professional and mental health biases than the 1977 sample.

Gender Effects

According to Veroff et al. (1981) women of all ages are more likely than men to spontaneously mention professional help in response to a hypothetical question about personal problems. They found the same pattern holds true for seeking mental health services. These findings remained stable from the 1957 sample to the 1976 sample. Coulton and Frost (1982) interviewed over 1500 older men and women and concluded that a higher proportion of women seek mental health services than men. Interestingly, Mitchell (1995) did not find a gender difference in older users of a variety of community services not including mental health services. Together, these findings suggest

that men may have a more negative attitude toward seeking psychological services than toward other services, a distinction not present for women. Gender differences in specific aspects of attitudes were not present for older women as demonstrated by Currin et al. (1998). However, female respondents had more positive scores on the Fischer-Turner Help Seeking Attitudes scale, as well as on the Range of Knowledge and Breadth scales in a sample that included older and younger adult women (Currin & Hayslip, 1999).

Gender was hypothesized to be related to mental health attitudes. Women were predicted to: 1) have more positive professional and mental health biases than men, 2) be more open to the possibility of seeking mental health services than men, 3) have greater knowledge of the range of problems addressed by mental health professionals than men, and 4) have greater breadth of conceptions of the causes of mental illness than men.

Interactions

As a secondary hypothesis, it was predicted that the interaction between Cohort and Gender is related to mental health attitudes. Specifically, women from the 2000 sample were predicted to: 1) have the most positive professional

and mental health biases, 2) be the most open to the possibility of seeking mental health services, 3) have the greatest knowledge of the range of problems addressed by mental health professionals, and 4) have the greatest breadth of conceptions of the causes of mental illness.

Analysis 2

As a primary hypothesis, cohort differences were expected to be related to mental health attitudes. As secondary hypotheses, age and gender were predicted to be singularly related to mental health attitudes. Interaction hypotheses were made on an exploratory basis as there is little existing data on which to base solid predictions.

Cohort/Historical Effects

The 2000 sample was predicted to: 1) have more positive professional and mental health biases than the 1991 sample, 2) be more open to the possibility of seeking mental health services than the 1991 sample, 3) have greater knowledge of the range of problems addressed by mental health professionals than the 1991 sample, 4) have greater breadth of conceptions of the causes of mental illness than the 1991 sample, and 5) hold more positive attitudes toward seeking psychological help than the 1991 sample.

Age Effects

Younger adults were predicted to: 1) have more positive professional and mental health biases than older adults, 2) be more open to the possibility of seeking mental health services than older adults, 3) have greater knowledge of the range of problems addressed by mental health professionals than older adults, 4) have greater breadth of conceptions of the causes of mental illness than older adults, and 5) hold more positive attitudes toward seeking psychological help than older adults.

Gender Effects

Women were predicted to: 1) have more positive professional and mental health biases than men, 2) be more open to the possibility of seeking mental health services than men, 3) have greater knowledge of the range of problems addressed by mental health professionals than men, 4) have greater breadth of conceptions of the causes of mental illness than men, and 5) hold more positive attitudes toward seeking psychological help than men.

Interactions

The primary interaction hypothesis predicted the degree of difference between the older samples will be greater than that between the younger samples due to

historically more negative attitudes among older adults that appear to be undergoing a positive shift. The relatively more positive attitudes held by younger adults have less room for positive change. Specifically, older adults from the 2000 sample were predicted to: 1) have more positive professional and mental health biases, 2) be more open to the possibility of seeking mental health services, 3) have greater knowledge of the range of problems addressed by mental health professionals, 4) have greater breadth of conceptions of the causes of mental illness, and 5) hold more positive attitudes toward seeking psychological help.

Finally, the interaction between Cohort, Age, and Gender was hypothesized to be related to attitudes. Specifically, older women from the 2000 sample were predicted to: 1) have the most positive professional and mental health biases, 2) be the most open to the possibility of seeking mental health services, 3) have the greatest knowledge of the range of problems addressed by mental health professionals, 4) have the greatest breadth of conceptions of the causes of mental illness, and 5) hold the most positive attitudes toward seeking psychological help.

CHAPTER 2

METHOD

Materials

A questionnaire was developed containing a number of questions, scales, and checklists for measuring several variables. This questionnaire is reproduced in Appendix A. Each of the samples completed the same questionnaire. The questionnaire contained several demographic items including: age, gender, marital status, highest level of education completed, retirement status, estimation of health, and income level. Additional measures from the questionnaire are discussed below.

Openness to Seeking Psychological Help

This measure, meant to assess openness to seeking psychological help, contains a list of 24 "problems" such as deep depression, forgetfulness, and arguments with children. Participants were asked whether or not they would seek help from a counselor or therapist for each of the problems. The number of items each participant endorsed was summed to give an Openness score with possible scores ranging from 0 to 24. Higher Openness scores indicate greater openness toward seeking mental health services. Alphas for this scale ranged from .81 to .87 (see Tables 5

& 13). The Openness scale has demonstrated significant construct validity, r=.48, p<.01, with the Help Seeking Attitudes scale developed by Fischer and Turner (1970) among young adults and likewise among older adults, r=.42, p<.01 (Currin & Hayslip, 1999).

Professional and Mental Health Biases

This measure, meant to assess professional and mental health biases, consists of 10 statements describing a variety of negative attitudes one might have toward mental health care issues. For example, one of the items asserts that mental health professionals only work with patients who are "crazy," while another suggests that counseling is a waste of time. Agreeing with these statements indicates a negative attitude toward the value of mental health care, the stigma attached to seeking psychological services, and mental health care professionals themselves. A 5-point scale was used to record the participants' responses, ranging from strongly disagree to strongly agree with the mid-point being an undecided response. The participants' responses were summed to obtain a Biases score. The scale was scored so higher scores indicate more positive attitudes. Alphas for this scale ranged from .67 to .84 (see Tables 5 & 13). The Biases scale has demonstrated

significant construct validity, r=.79, p<.01, with the Fischer and Turner (1970) Help Seeking Attitudes scale among young adults and likewise among older adults, r=.72, p<.01 (Currin & Hayslip, 1999).

Range of Knowledge of the Problems Helped by Psychologists

Participants were asked to respond to a list designed to measure their estimate of the range of experiential difficulties mental health professionals might remedy. The list contains 35 situations, such as death of a spouse, major illness or injury, and living on a fixed income. Participants were asked to answer yes or no to the following question: "In your opinion, do you think the following things that sometimes happen to people create a problem that could be helped by seeing a professional counselor or therapist?" The number of items each participant endorsed was summed to give a Range of Knowledge score with possible scores ranging from 0 to 35. Higher scores indicate greater range of knowledge of problems that could be addressed by mental health professionals. Alphas for this scale ranged from .87 to .93 (see Tables 5 & 13). The Range of Knowledge scale has demonstrated significant construct validity, r=.40, p<.01, with the Fischer and Turner (1970) Help Seeking Attitudes

scale among young adults and also among older adults, r=.23, p<.01 (Currin & Hayslip, 1999).

Breadth of Conceptions of Mental Illness Causes

Alphas of .63 to .81 (see Tables 5 & 13) were obtained for a 10-item scale of breadth of conceptions of the causes of mental illness. This scale consists of statements describing a variety of reasons one might develop mental health problems. For example, one of the items asserts that poisonous substances cause mental illness while another suggests that such problems are due to ones "body type." In general, each of the items suggests that one, over-arching force causes the majority of mental health problems. Agreeing with these statements indicates a lack of sophistication about mental illness and a reliance on simplistic explanations or stereotypes. A 5-point scale was used to record the participants' responses, ranging from strongly disagree to strongly agree with the mid-point being an undecided response. The participants' responses were summed to obtain a Breadth score. The scale was scored so that higher scores indicate broader conceptions of mental health problems. The Breadth scale has demonstrated significant construct validity, r=.22, p<.01, with the Fischer and Turner (1970) Help Seeking Attitudes scale

among young adults as it has among older adults, r=.27, p<.01 (Currin & Hayslip, 1999).

Attitudes Toward Seeking Psychological Help

The Help Seeking Attitudes scale was developed by Fischer and Turner (1970) and consists of 29 items employing a 4-point scale to record participants' responses, ranging from strongly disagree, probably disagree, probably agree, and strongly agree. This scale provides a multidimensional measure of respondents' attitudes toward seeking psychological help. It has demonstrated reliable internal consistency (r = .86), test-retest reliability at five days (r = .86) and at two months (r = .84), and discriminant validity. The Help Seeking Attitudes scale has been shown to distinguish between those who have had professional mental health attention (higher scores) and those who have not. Women have also been shown to have higher scores than men. Overall, scores observed by the authors were positive (Fischer & Turner). For this study, the participants' responses were summed to obtain a Help Seeking Attitudes score. The scale was scored so that higher scores indicate more positive attitudes toward seeking psychological help. Alphas for this scale ranged from .85 to .90 (see Table 13).

Previous Use

Previous use was determined by a question asking the participants whether they had ever sought professional help for an emotional/mental problem of a personal nature. They responded by checking yes or no. Significant correlations (point biserial *r*) of previous use of mental health services with the attitude scales ranged from *r*=.21 to .36 (see Tables 2, 3, 4, 9, 10, 11, & 12).

Intercorrelations Among Attitude Scales

Significant intercorrelations among the attitude scales by cohort ranged from *r*=-.25 to .79 (see Tables 2, 3, 4, 9, 10, 11, & 12). Average interscale correlations ranged from *r*=.17 to .36. These data suggest that the scales measure distinct aspects of attitude.

Participants

For Analysis 1 data were collected from three independent samples of noninstitutionalized community-residing older adults. The first was sampled in 1977 (*N* = 90; *M* age = 70.22 years; *SD* age = 6.48 years). The second was sampled in 1991 (*N* = 101; *M* age = 70.81; *SD* age = 4.22 years). The third was sampled in 2000 (*N* = 99; *M* age = 69.83; *SD* age = 4.95 years). These numbers reflect the make-up of the samples after cases from each were

eliminated in an effort to reduce overlap in date of birth across the samples. Three cases were eliminated from the 1977 sample, 15 cases from the 1991 sample, and 12 cases from the 2000 sample. Following the case eliminations, the 1977 and 1991 samples did not have any overlap within +/- 1 standard deviation of mean age and shared 16.75% overlap in date of birth overall. The 1991 and 2000 samples did not have any overlap within +/- 1 standard deviation and shared 40.0% overlap overall. The samples differed on several demographic variables (see Table 1). Compared to the 1977 sample, the 1991 and 2000 samples were more highly educated, reported better health, and had higher income. The 1991 and 2000 samples were more likely to have utilized mental health services than the 1977 sample. In the 1977 sample 67.8% were female, women comprised 71.3% of the 1991 sample, while 72.7% of the 2000 sample were female.

In Analysis 2 data were collected from two independent samples of noninstitutionalized community-residing older adults and two independent samples of younger adults. A group of younger and older adults were sampled in 1991 (*N* = 131; *M* age = 21.14; *SD* age = 3.85 years and *N* = 93; *M* age = 73.77; *SD* age = 5.21 years, respectively). Younger and older adults were then sampled in 2000 (*N* = 147; *M* age =

20.62; SD age = 2.12 years and N = 91; M age = 69.37; SD age = 4.71 years, respectively). These numbers reflect the make-up of the samples after cases from each were eliminated in an effort to reduce overlap in date of birth across the samples. Twenty-three cases were eliminated from the 1991 Older sample, 16 cases from the 2000 Older sample, and 5 cases from the 2000 Younger sample. No cases were eliminated from the 1991 Younger sample. Following the case eliminations, the Older samples did not have any overlap within +/- 1 standard deviation of mean age and shared 12.5% overlap in dates of birth overall. Between the Younger samples only 2 cases (1.4%) from the 2000 sample had overlapping dates of birth with the 1991 sample. The samples differed on several demographic variables (see Table 8). The Older samples had achieved higher levels of education and reported higher levels of income than the Younger samples. The Younger samples reported better health than did the Older samples. Males from the 1991 samples had higher income levels than did the other samples. Women were more likely than men to have used mental health services, and compared to the 1991 Older sample, participants of the 2000 Younger sample were more likely to have used mental health services. In the 1991 Younger sample 69.4% were

female, women comprised 68.8% of the 1991 Older sample, 75.5% of the 2000 Young sample were female, and in the 2000 Older sample 71.4% were female.

CHAPTER 3

RESULTS

Analysis 1

Coefficient alphas were established for each of the scales (see Table 5). The design was a 3 x 2 between groups factorial design and was restricted to older adults. The first factor was "Cohort." It had three levels: "1977," "1991," and "2000." The second factor, "Gender," consisted of two levels: "Male" and "Female." Data were analyzed via MANOVA utilizing Cohort and Gender as independent variables and the attitude scales (Openness, Biases, Range of Knowledge, Breadth) as dependent variables. With the exception of the Range of Knowledge scale, $F(5,284)=2.75$, $p=.019$, the assumption of homogeneity of variance was met as measured by Levene's Test of Equality of Error Variances. These analyses indicated a main effect for Cohort, $F(8,562)=17.24$, $p<.001$. There was also a main effect for Gender, $F(4,281)=7.35$, $p<.001$. There was an interaction between Cohort and Gender, $F(8,562)=2.55$, $p=.01$.

Univariate analysis indicated Cohort differences for the Openness, $F(2,284)=10.84$, $p<.001$, Range of Knowledge, $F(2,284)=28.12$, $p<.001$, and Breadth, $F(2,284)=41.83$,

p<.001, scales. Gender differences were reported for the Biases, F(1,284)=26.10, p<.001 and Breadth, F(1,284)=7.29, p=.007, scales, with women reporting fewer biases and greater breadth. The Biases and Breadth scales likewise had Cohort X Gender interaction differences, F(2,284)=4.15, p=.017 and F(2,284)=4.75, p=.009 respectively (see Figures 1 & 2). Men from the 1991 and 2000 samples had lower Biases scores than women, as did men from the 2000 sample on the Breadth scale.

Additional analysis, utilizing Tukey HSD Post Hoc test, revealed specific cohort differences (see Table 7). The 1991 and 2000 samples had higher Openness, Range of Knowledge, and Breadth scores than did the 1977 sample. For the Biases scale, only the 1991 sample had higher scores than the 1977 sample. No differences were indicated between the 1991 and 2000 samples for any of the scales.

Data were next analyzed via MANCOVA, again employing the attitude scales as dependent variables and Cohort and Gender as independent variables. In this case, age, level of education, self-reported health, and income served as covariates. Among the covariates, only age related to the dependent variables as a set at the multivariate level, F(4,262)=2.65, p=.039. At the univariate level, only the

Biases scale was significantly influenced by age, $F(1,265)=7.55$, $p=.006$. Furthermore, when controlling for age, level of education, self-reported health, and income, the above Cohort differences remained at the multivariate level, $F(8,524)=9.21$, $p<.001$. Likewise, the Gender differences and Cohort X Gender interactions remained, $F(4,262)=7.12$, $p<.001$ and $F(8,524)=2.29$, $p=.020$, respectively. At the univariate level, Cohort effects remained for Openness $F(2,265)=9.36$, $p<.001$, Range of Knowledge, $F(2,265)=14.81$, $p<.001$, and Breadth, $F(2,265)=19.00$, $p<.001$. As before, Biases $F(1,265)=24.08$, $p<.001$, and Breadth, $F(1,265)=8.94$, $p=.003$, differed by Gender. These two scales also had Cohort X Gender interaction effects Biases $F(2,265)=4.38$, $p=.014$, and Breadth, $F(2,265)=3.91$, $p=.021$. The patterns of interaction were similar to those reported above. That is, men from the later samples had lower Biases scores, and men from the 2000 sample had lower Breadth scores.

Chi-square analysis revealed differences in Previous Use of Mental Health Services. The 1991 and 2000 samples reported greater use of mental health services than did the 1977 sample, $\chi^2(1, N=191)=9.07$, $p=.003$ and $\chi^2(1, N=189)=13.25$, $p<.001$, respectively.

Analysis 2

Coefficient alphas were established for each of the scales (see Table 13). The design was a 2 x 2 x 2 between groups factorial design. The first factor was “Cohort.” It consisted of two levels: “1991" and “2000.” The second factor “Age,” had two levels: “Older” and “Younger.” The third factor, “Gender,” consisted of two levels: “Male” and “Female.” Data were analyzed via MANOVA utilizing Cohort, Age, and Gender as independent variables and the attitude scales (Openness, Biases, Range of Knowledge, Breadth, Help Seeking Attitudes) as dependent variables. With the exceptions of the Biases, $F(7,454)=2.89$, $p=.006$, and the Help Seeking Attitudes scales, $F(7,454)=2.369$, $p=.021$, the assumption of homogeneity of variance was met as measured by Levene's Test of Equality of Error Variances. These analyses indicated a main effect for Cohort, $F(5,450)=3.73$, $p=.051$. There was a main effect for Age, $F(5,450)=8.59$, $p<.001$. There was also a main effect for Gender, $F(5,450)=11.26$, $p<.001$. A 2-way interaction between Age and Gender was found, $F(5,450)=2.93$, $p=.013$, as was a 3-way interaction between Cohort, Age, and Gender, $F(5,450)=3.06$, $p=.01$.

Univariate analysis indicated Cohort differences for the Biases and Help Seeking Attitudes scales, with the 1991 sample reporting more positive help seeking attitudes and fewer biases, $F(1,454)=7.17$ $p=.008$ and $F(1,454)=10.34$, $p=.001$, respectively. Age differences indicated that Younger adults held fewer biases and greater range of knowledge, $F(1,454)=4.34$, $p=.038$ and $F(1,454)=16.12$ $p<.001$, while Older adults held greater breadth, $F(1,454)=7.72$, $p=.006$. Gender differences were reported for the Biases, $F(1,454)=46.89$, $p<.001$, Range of Knowledge, $F(1,454)=4.95$, $p=.027$, and Help Seeking Attitudes, $F(1,284)=41.09$, $p<.001$, scales, with women reporting fewer biases, greater range of knowledge, and more positive help seeking attitudes. The Breadth scale had an Age X Gender interaction (see Figure 3), with older women obtaining the highest scores, and a Cohort X Age X Gender interaction (see Figure 4), with older men from the 2000 sample obtaining the lowest scores, $F(1,454)=14.19$, $p<.001$ and $F(1,454)=4.92$, $p=.027$ respectively.

Data were next analyzed via MANCOVA, again employing the attitude scales as dependent variables and Cohort, Age, and Gender as independent variables. In this case, level of education, self-reported health, and income served as

covariates. Among the covariates, only health related to the dependent variables at the multivariate level, $F(5,438)=2.67$, $p=.022$. At the univariate level, only the Breadth scale was significantly influenced by health, $F(1,442)=6.40$, $p=.012$. Furthermore, when controlling for level of education, self-reported health, and income, the above Cohort, Age, and Gender differences remained at the multivariate level, $F(5,438)=3.53$, $p=.004$, $F(5,438)=5.48$, $p<.001$, and $F(5,438)=11.45$, $p<.001$, respectively. Likewise, the Age X Gender and Cohort X Age X Gender interactions remained, $F(5,438)=2.94$, $p=.013$ and $F(5,438)=2.92$, $p=.013$, respectively. At the univariate level, Cohort effects remained for Biases, $F(1,442)=7.29$, $p=.007$, and Help Seeking Attitudes, $F(,442)=11.68$, $p=.001$. As before Biases, $F(1,442)=3.91$, $p=.049$, and Range of Knowledge, $F(1,442)=15.29$, $p<.001$, differed by Age. However, with controlling variables, an Age effect was not seen for the Breadth scale. As before, Biases, $F(1,442)=49.97$, $p<.001$, Range of Knowledge, $F(1,442)=4.37$, $p=.037$, and Help Seeking Attitudes, $F(1,442)=40.03$, $p<.001$, differed by Gender. Additionally, when controlling for education, health, and income, the Breadth scale also differed by Gender, $F(1,442)=5.64$, $p=.018$. Interaction effects, Age X Gender,

$F(1,442)=14.07$, $p<.001$, and Cohort X Age X Gender, $F(1,442)=3.89$, $p=.049$, with patterns similar to those reported for the MANOVA results, remained for the Breadth scale.

Chi-square analysis indicated a gender difference in Previous Use of Mental Health Services. Women reported greater use of mental health services than did men, $\chi^2(1, N=462)=7.32$, $p=.007$.

CHAPTER 4

DISCUSSION

Analysis 1

In Analysis 1 the self-reported attitudes of three samples of older adults were compared. On three out of four scales, the two later samples held more positive attitudes than did the 1977 sample. The 1991 and 2000 samples did not differ with respect to attitude on any of the scales. Among the three samples, women held fewer negative biases and had greater breadth of conceptions of the causes of mental illness than men. Interactions revealed that women had fewer negative biases than men in 1991 and 2000, whereas they did not in 1977 (see Figure 1). Another Gender X Cohort interaction indicated that men from the 2000 sample had more limited breadth of conceptions than did women from the 2000 sample and than both genders from the 1991 sample (see Figure 2). When taking into consideration the participants' age, income, health, and level of education, the differences noted above remained.

Hypotheses for Analysis 1 were partially met. That is, predictions that later samples would have more positive attitudes as measured by the Openness, Range of Knowledge, and Breadth scales were supported with respect to the 1991

and 2000 samples compared to the 1977 sample. However, this pattern did not hold between the 1991 and 2000 samples. Additionally, the 2000 sample was expected to have fewer negative biases than the 1977 sample, but it did not. It was further hypothesized that women would demonstrate more positive attitudes on each of the scales measured. While women did show fewer negative biases and greater breadth than men, they did not report greater range of knowledge or openness. Finally, the hypothesis that women from the 2000 sample would have the most positive attitudes was not supported. This group had Biases scores similar to women in the 1991 sample and Breadth scores similar to men and women in the 1991 sample.

These findings speak to the existing literature in a variety of ways. There is clear but limited support for conclusions drawn from Veroff et al. (1981) that older adults' attitudes appear to have shifted in a positive direction. That is, the differences the authors reported between older adults in 1957 and 1976 is consistent with what was seen between those sampled in 1977 and 1991. However, it also appears that the trend observed over that span of 35 years did not continue during the past decade. The degree of positivity of attitudes in older adults is

essentially the same now as it was in 1991. A similar pattern also exists for utilization of mental health services. While reported utilization of mental health services increased from 1957 to 1976 (Veroff et al.) and from 1977 to 1991, according the present findings, it did not increase further from 1991 to 2000.

These findings suggest that some of the projections made by scholars about the continuing shift of attitudes in a positive direction may be facing limitations. Hayslip and Panek (1993) and Moen (1978) suggested that openness to receiving mental health care would continue to increase over time. This does not appear to be case since 1991. A similar trend predicted by Currin et al. (1998) did not occur. Gatz and Smyer (1992) believed that future groups of older adults would have a better understanding of the nature of mental health treatment. The degree of understanding depicted in this study, particularly as reflected in scores from the Biases, Range of Knowledge, and Breadth scales, now appears to be static, not increasing in degree.

Analysis 2

In Analysis 2, measures of attitude were given to distinct groups of younger and older adults in 1991 and

2000. Those surveyed in 1991 held fewer negative biases and more positive help seeking attitudes than did those in 2000. Younger adults also held fewer negative biases and had a greater range of knowledge of the causes of mental illness. Still, older adults demonstrated greater breadth of conceptions. Women held fewer negative biases, had greater range of knowledge, and held more positive help seeking attitudes than men. An Age X Gender interaction indicated that older women had greater breadth than did men and younger women (see Figure 3). Finally, a Cohort X Age X Gender interaction revealed that older men from the 2000 sample had lower breadth than women from either sample (see Figure 4). When controlling for level of education, health, and income, each of the above differences remained except the older adults' greater degree of breadth compared to younger adults. Additionally, women demonstrated greater breadth than men, in addition to the other attitude scales, when controlling factors were considered.

Many of the primary hypotheses of Analysis 2 were not supported. Similar to the results from Analysis 1 for the 1991 and 2000 samples, the 2000 sample in this analysis did not demonstrate more positive attitudes on any of the scales used. Rather, the 1991 sample held fewer negative

biases and more positive help seeking attitudes. Hypotheses related to age were split. That is, younger adults, as hypothesized, had fewer negative biases and had a greater range of knowledge than did older adults. They did not, however, have greater openness, breadth, or help seeking attitudes. It was predicted that women would have fewer negative biases, greater range of knowledge, greater breadth, and more positive help seeking attitudes than men. While the data supported these hypotheses, a similar expectation related to openness was not supported. Hypotheses related to Age and Cohort, that older adults from the 2000 sample would have more positive overall attitudes, were not supported. Finally, the prediction that older women from the 2000 sample would have the most positive attitudes was only seen in the Breadth scale.

Findings from Analysis 2 provided information helpful for the comparison of attitudes of older adults to those of younger adults. Previous findings suggesting that younger adults hold more positive attitudes toward mental health and psychological services than do older adults (Farberman, 1997; Thorson & Powell, 1991) did not receive consistent support in this study. While younger adults demonstrated fewer negative biases and greater range of knowledge, they

had similar levels of openness and help seeking attitudes. Equivalent Openness scale findings for younger and older adults did not support the report by Spitzer, Bar-Tal, and Ziv, (1996) that older adults are less willing than younger adults to give up independence in order to receive mental health care. The findings for this scale also challenge the contention of Murstein and Fontaine (1993) that younger adults are more comfortable receiving psychological treatment than are older adults. However, in this present study older adults were shown to hold more negative biases than younger adults, lending support to Kahn's (1975) suggestion that older adults may view receiving psychological treatment as a disgrace, while younger adults may look at it as a status symbol. Greater breadth of perceptions of the causes of mental illness was not found for older adults when controlling for health, income, and level of education. This suggests that older adults do not, any more than do younger adults, hold limited or inaccurate attributions to the causes of mental illness, as indicated in the literature (Blank, 1977; Lasoski, 1986; Lebowitz & Niederehe, 1992; Ray et al., 1992; Shapiro, 1986; Woodruff et al, 1988). This finding for Breadth also diverges from Gurin et al. (1960) who, in their study, found that older

adults were less likely to label a problem as psychological than younger adults. However, the Gurin et al. conclusion is consistent with current results related to range of knowledge of psychological problems being greater for younger adults. Likewise, Woodruff's (1988) report that older adults are more likely than younger adults to believe that mental health treatment is only for the "mentally ill" is not challenged by the Range of Knowledge scale finding or the Biases scale results. In general, the age-related findings in this study suggest that mental health attitude differences were minimal between older and younger adults. This fact differentiates the findings of this study from much of the previous research.

Gender differences in this study provided substantial support for research suggesting that women have more positive attitudes toward the world of mental health than do men (Coulton & Frost, 1982; Mitchell, 1995; Veroff et al., 1981). Their attitudes were more positive than men's on four of five scales measured in Analysis 2 (Biases, Range of Knowledge, Breadth, and Help Seeking Attitudes).

Integration of Analysis 1 & 2

Cohort/Historical Effects

In general, there appears to be notable differences in attitudes toward mental health and psychological services between the 1977 and later samples. However, a sustained trend of attitudes becoming more positive across subsequently sampled groups of older adults was not demonstrated. Rather, there were no differences in attitudes between 1991 and 2000 samples with the exception of two. When considered together, older and younger adults' attitudes, with respect to biases toward mental health and breadth of conceptions, were less positive for the 2000 than the 1991 samples.

Breadth

The Breadth scale, as discussed above, addresses the tendency to conceive of the causes of mental health problems in a rigid and stereotypical fashion versus a broader, more flexible fashion. As the mean scores of the 1991 and 2000 samples fell nearly 1.5 standard deviations above that of the 1977 sample, it appears that the later samples of older adults are more flexible in their thinking about mental illness. That is, they subscribe less to sweeping, stereotypical etiologies of mental health

problems than do those of the 1977 sample. Shapiro (1986) suggested that many older adults assume that mental health problems are part of the normal aging process. This belief exemplifies a narrow view of the etiology of mental health problems. Such thinking, according to Shapiro, leads to lower utilization of psychological services. Indeed, a narrow view of the causes of mental health problems may effect the decision making process about whether or not to seek help at the first stage of the Gurin et al. (1960) three-stage model of mental health utilization. The first stage in deciding to seek psychological help, according to these researchers, is determining whether or not a problem is psychological in nature. Limited breadth may reduce the likelihood that someone would consider a particular problem to have psychological components. It appears that later samples of older adults are more likely to look at psychological problems in a broad and flexible way and, perhaps, are more likely to use mental health services.

Range of Knowledge

For the Range of Knowledge scale, the differences seen suggest that the later samples have more inclusive estimates of the range of problems that may be addressed by mental health professionals. The mean scores of the 1991

and 2000 samples were at or nearly 1.5 standard deviations above the mean score of the 1977 sample. The 1977 sample endorsed less than 25% of the scenarios as something that mental health professional could help, while the later samples endorsed nearly half of the items. Clearly, the later samples would expect mental health professionals to be able to deal with many more types of issues. Perhaps the knowledge deficits among older adults, as discussed by Lundervold and Young (1992), of aging and mental health, payment mechanisms for therapy, availability of services, and effectiveness of treatment have decreased among later samples of older adults. The effects of these changes on attitudes, like the Breadth scale, would likely have an impact on the first stage of the Gurin et al. (1960) model. A greater range of knowledge of the problems that can be helped by mental health professionals would increase the likelihood of determining that a problem was psychological in nature. Greater range of knowledge may also impact the third stage. When selecting a helper for problems such as those represented in this scale, a greater tendency to expect mental health professionals to be able to be of help would increase the likelihood that an older adult would then select from this type of provider.

Within the Range of Knowledge scale, those items with few endorsements by any of the samples may be less amenable to change than those that saw change between 1977 and 1991. A nonempirical observation of some of the specific items provided the following insight. For some items, there appeared to be dramatic differences in the rates of endorsement between 1977 and the later samples. Sexual difficulties; problems with drugs, alcohol, or prescription medications; and divorce each were endorsed at what seemed to be a much higher rate by the later samples than by the 1977 sample. However, many other items appeared to have little or no change in either of the later samples compared to the 1977 sample. These included items such as voluntary retirement, empty nest syndrome, loneliness, major surgery, problems with medication side effects, loss of affiliation from one's church, and changes in sleeping habits. For now, unlike the areas of addiction, sexual dysfunction, and divorce, endorsement of items related to adjustment, spirituality, and behavioral health seem to be unchanged.

Openness

Findings from the Openness scale suggest the 1991 and 2000 samples of older adults would be willing to seek help for a greater number of issues than the members of the 1977

sample. As described above, this scale asked respondents to answer yes or no if they would seek the help of a mental health professional for a variety of issues as it pertained to them personally. This difference may then reflect the most important aspect of attitude- attitudes toward personal utilization. The degree of openness one has toward seeking psychological services for a personal problem is an important part of the second stage of the Gurin et al. (1960) model. Here, one decides whether to seek help or attempt to solve the problem oneself. Based on the observed difference in this study, we would expect those from later samples to decide to seek help for a greater number of situations. Interestingly, the participants' report of previous use of mental health services did not correlate with the Openness scale for any of the samples. Perhaps those who utilized mental health services did so for a small number of common problems and less so for the broad possibilities represented on this scale.

Unlike within the Range of Knowledge scale, there appeared to be more of a general increase in endorsement of Openness items by the later samples than by the 1977 sample. Still, a few items, related to traditional "mental illness," apparently had dramatic increases in the rates of

endorsement following the 1977 sample. These items included unidentifiable fear or anxiety, seeing or hearing things, and not being in touch with reality.

Biases

For the Biases scale, earlier research indicated that 1977 and 1991 samples of older adults did not differ (Currin et al., 1998). It was thought that a sample further separated in time from the 1977 sample would demonstrate a difference. However, the 2000 sample did not differ from the 1977 sample. Thus, it does not appear that for older adults, the Biases scale is sensitive to the differences seen in the other scales, even with additional separation of time. Looking then to Analysis 2, including younger and older adults, a surprise was found in that the 1991 sample had fewer negative biases than did the 2000 sample. Although the samples appeared to be in general agreement with one another, the 1991 sample had stronger disagreement with the biases presented. For example, the 1991 sample reported what looked to be stronger disagreement than the 2000 sample with statements that mental health professionals only work with those that are “mentally ill,” that people would view one as “crazy” if they sought help from a counselor, and that counseling is a “waste of time.”

Help Seeking Attitudes

The Fischer and Turner (1970) Help Seeking Attitudes scale, like the Biases scale, showed more positive attitudes in the 1991 sample than in the 2000 sample when including younger and older adults. The results from this scale supplement the findings from the other scales with the conclusion that not only specific, but also multidimensional, measures of attitude have either remained the same with respect to level of positivity or declined. Still, the 1991 sample appeared to be similar to the 2000 sample, with only slightly more positive attitude responses across most of the items on the scale. Based on casual observation, some exceptions included notably more positive attitudes toward seeking help for a “mental breakdown,” less agreement that being a psychiatric patient is a “blot” on someone’s life, greater agreement that the likelihood of solving an emotional problem is increased by using professional help, and less agreement that mental illness carries with it shame.

Age Effects

The attitude differences between younger and older adults were mixed. There were no differences on measures of openness, breadth, and help seeking attitudes. Still,

younger adults had fewer negative biases and greater range of knowledge.

Since younger adults showed a greater range of knowledge than did older adults, it is expected that they have a greater awareness of the variety of problems with which mental health professionals can assist. It appeared that younger adults tended to view children leaving home, change from the past, isolation from one's family, sexual difficulties, and the death of a close friend as areas that could be helped by seeing a professional counselor or therapist to a greater degree than older adults. It is possible that many older adults have lived through these experiences without benefit of professional support and thus would not think of them as necessary or appropriate for mental health professionals to address. Interestingly, while younger adults may have more awareness of the possible problems that mental health professional address, as suggested by the Range of Knowledge scale findings, they were not more likely to report that they would take advantage of counseling for more reasons than older adults, as would have been seen in the Openness scale.

Younger adults held fewer negative biases than older adults. For example, there looked to be stronger rejection

by younger adults of the statement that older adults should be able to handle problems on their own. Over 87% of younger adults either disagreed or strongly disagree with that statement compared to 68% of older adults. Thirty-one percent of older adults were either undecided or agreed with this statement compared to 12% of younger adults.

Gender Effects

As expected, women tend to have more positive attitudes toward mental health than do men. However, this was not the case for all the aspects of attitude measured. Older women only had greater breadth and fewer biases than did men. However, older and younger women together were more positive than men in these areas as well as in breadth of conceptions of the causes of mental illness and their help seeking attitudes.

Interactions

Widespread interactions were not found in this study. They were limited to the Biases and Breadth scales in Analysis 1 and to the Breadth scale alone in Analysis 2. Overall, older men, and particularly older men from the 2000 sample, had more negative biases and had more limited breadth of conceptions of the causes of mental illness than their female counterparts.

Previous Utilization of Mental Health Services

Reports of utilization of mental health services mirrored the attitude scales findings. That is, among older adults, the 1991 and 2000 samples had similar prevalence of mental health service utilization, and both had greater previous use of mental health services than did the 1977 sample. Among younger and older adults together, women were more likely to have used mental health services than men. The pattern of differences between the samples in their attitudes and their utilization of mental health services, as seen in this study is consistent with widespread research claims that attitudes and utilization impact each other (Deane & Todd, 1996; Furnham & Andrew, 1996; Furnham & Wardley, 1990; Speer et al., 1991). Still, correlations between the attitude scales and report of previous use of mental health services were not consistently found. Those that did correlate were not strong (see Tables 2, 3, 4, 9, 10, 11, & 12). This would suggest that while utilization of mental health services has a positive influence on attitudes, the relationship is more pronounced for global attitudes than for specific aspects of attitudes.

Possible Influences on Attitudes

What follows is consideration of some of the influences that may have contributed to the findings discussed above. Addressed first are the notable differences between the 1977 sample and the 1991 and 2000 samples of older adults. Then, issues related to the near absence of attitude differences between 1991 and 2000 are discussed.

This data does not answer the question of why differences in attitudes, some dramatic, were seen between the 1977 and later samples of older adults. For now, one can speculate about the reasons that differences exist. To begin, it may help to look closer at the samples themselves. The members of the 1977 sample, with a mean age of 70.2, were born around 1907. They became adults in the 1930s and were in middle adulthood at the end of World War II. The members of the 1991 sample and the 2000 sample, mean ages of 70.8 and 69.8 respectively, were born around 1920 and later. Many in these samples became adults after World War II. Those from the 1991 sample were in middle adulthood in the late 1950s and early 1960s, while the 2000 sample reached this stage around 1970. Though these samples share many of the same 20th century experiences, they did

so from different developmental places. For example, by the time the 1991 sample reached the age of 45 in 1964, television ownership and usage was becoming widespread. At the same age for the 1977 sample, television ownership was still exceptional. Additionally, the later samples witnessed the stock market crash of 1929 as children or not at all, while the 1977 sample experienced this as young adults.

Generally speaking, historical influences may account for some of the improvement in attitudes across samples of older adults because of the different ways they impacted these groups. It has been suggested that members of earlier-born cohorts are more invested in an ethic of "rugged individualism," having been adults throughout the Depression of the 1930s, than are later-born cohorts who were not (Butler & Lewis, 1973). Thus, these groups may place a different value on overcoming personal difficulties on their own. That the 1991 and 2000 samples would seek help for a greater variety of problems than would the 1977 sample, as suggested by the Openness scale results, may be a reflection of this historical difference.

Ray et al. (1992) contend that people who were reared in the first half of this century are more likely to attach

personal guilt to their psychological problems as a result of the heavy influence of psychoanalytic interpretations of mental disorders. Over the course of the century, other interpretations of mental health have moved to the forefront such as humanistic, behavioral, and cognitive-behavioral theories. The later samples may have been influenced by these recent perspectives, perhaps considered more accepting and amenable to one's own efforts to change, to a greater extent than the 1977 sample.

The temporal relationship of these groups to the sweeping scientific and technological changes that have taken place since 1950 may also help to explain the differences between the samples (Veroff et al., 1981). Advances in electronic media, print, and transportation in addition to an increasing acceptance of science and technology may have impacted the samples differently. Perhaps the later samples' increased exposure at a younger age to television and other products of the last 40 years has led them to develop a more sophisticated perspective about mental health problems and potential interventions. This may contribute to the reason they subscribed less to sweeping, stereotypical etiologies of mental health problems than did the 1977 sample, as reflected in the

Breadth scores. Additionally, increased exposure to media, advertising, and widespread communication could account for some of the increase in knowledge of the range of problems addressed by mental health professionals detected in the 1991 and 2000 samples compared to the 1977 sample.

Another historical influence of importance is the mental health movement of the mid-twentieth century, in particular the trend toward deinstitutionalization. The earlier in the lives of older adults that this movement took place, the greater the opportunity for them to become aware of the notion of outpatient mental health treatment, the trend toward deinstitutionalization, and the passing of the clinical use of such terms as "insane" and "neurotic." These influences, long linked to negative attitudes towards seeking psychological services (Gatz & Smyer, 1992; Lasoski & Thelen, 1987; Woodruff et al., 1988), appear to have lost strength among more recently born samples of older adults. Increased awareness of the modern mental health movement, like the emergence of science and technology, help explain the greater range of knowledge and greater breadth of conception of mental health issues seen in the 1991 and 2000 samples.

A visible product of the mental health movement has been the establishment of Community Mental Health Centers (CMHCs) over the last 30 years. Mensh (1973) predicted that CMHCs, in addition to other multidisciplinary programs for older adults, would have a major impact in meeting the mental health needs of older adults during the subsequent decades. It appears that CMHCs may have made a difference. Madianos et al. (1999) reported more positive attitudes in a sample measured following the development of CMHCs in Athens, Greece compared to a similar sample measured 15 years prior, at which time there were no CMHCs. The increased proximity of services, affordable costs for therapy, and special programs designed for older adults has led to higher rates of utilization of mental health services in some areas (Lebowitz & Niederehe, 1992). One might speculate that these factors have served to improve attitudes among the later samples of older adults, who may have benefited from CMHCs or their larger institutional impact more than the 1977 sample. This difference in impact may have occurred because the influences of the CMHCs were already prevalent during the middle and young adult years for the 1991 and 2000 samples, whereas they would have been new and unfamiliar to the 1977 sample when they were in

their mid-60s. Additionally, greater mobility of the later samples may have increased the likelihood of their benefiting from newly available services. Finally, the later samples may be enjoying the benefits a general awakening in this society of health care providers, researchers, educators, and politicians to issues of importance to older adults such as concerns about abuse, life expectancy, health care, attention to special needs, and an overall acceptance of the later years as important and productive.

It was expected that the impact of the influences described above on the samples in this study would have effected the 2000 sample with respect to the 1991 sample in a similar way as they appear to have effected the 1991 sample with respect to the 1977 sample. Clearly, though, this was not the case. It is possible then, that historical influences impacted the 2000 sample only to the same degree they did the 1991 sample and no more. Perhaps with respect to influencing attitudes toward mental health services, the effects of technological advances and changes in the mental health care system have reached a plateau. A particularly positive bias among the 1991 sample may have made it difficult for the 2000 sample to demonstrate a positive

difference in attitudes from that sample. However, the samples were each recruited using similar methods and in similar geographic regions, so it is not likely that this would have been a significant factor. As noted above previous use of mental health services were similar between the 1991 and 2000 samples. To the extent that utilization of mental health services has a causal impact on attitudes, we would then expect attitudes to be similar between samples if previous use is also similar between them. However, the actual relationship between attitude and utilization is not well known. Additionally, previous use was not highly correlated with the attitude scales in this study.

Finally, there is the possibility that recent cultural influences on the 2000 samples limited some of the positive historical and technological influences discussed above, thereby preventing the 2000 samples from recording more positive attitudes than the 1991 samples. The similarity of the results when looking at older adults alone and when looking at older and younger adults together supports the likelihood that any influence by recent events was common to younger and older adults. There are several possible influences may have been prevalent during the past decade.

Tightening of mental health benefits by insurance providers may have increased the barriers to receiving mental health services and thus frustrated otherwise interested or needy adults. Indeed, perceptions of barriers such as inaccessibility are related to negative attitudes (Gray, 1993; Lasoski, 1986). The increased awareness and diagnosability of Alzheimer's disease over the past decade may have heightened fear among older adults of being diagnosed by mental health professionals. A backlash in attitude about the Ritalin explosion of the 1980s and 1990s could have contributed to the attitudes of the 2000 sample. An increased awareness of the abuses by mental health professionals in the 1980s could have held back positive attitudes. Also, widespread use of mental illness pleas in criminal cases may have tainted the attitudes of adults with respect to the larger field of mental health.

The role of the media in recent years may have impacted the attitudes of the 2000 samples. Negative media exposure has been shown to produce harsher attitudes toward mental health issues (Thornton & Wahl, 1996). The portrayal of mental health providers in pop-culture, such as in the sitcom "Frasier" and the radio show "Dr. Laura," may have led to inaccurate impressions of the field. According to

Von Sydow and Reimer (1998) the media has typically portrayed the process of psychotherapy as a manipulative process often involving trance-like hypnosis. Moreover, this depiction, often relying heavily on outdated psychoanalytic images, usually concludes with ineffective or even harmful results for the recipient. Fortunately, the media need not be an enemy to the mental health field. Thornton and Wahl also found that accurate information presented in the media can mitigate the effects of negative exposure. An investigation into the use of television to affect attitudes toward mental health facilities and mental illness found that those who observed an educational program had more accurate information and more positive attitudes (Medvene & Bridge, 1990).

With respect to the attitudes of older men, in particular the Age X Gender and Cohort X Age X Gender interactions seen in the Biases and Breadth scales, it appears some force has uniquely impacted them in a negative way. Other researchers have observed similar trends. Madianos et al. (1999) reported that there was no difference in men and women’s attitudes toward mental illness in 1979. However, similar samples measured in 1994 indicated women, at that point, had more positive attitudes

than men. It has been suggested that better health and greater longevity among men has caused them to be thrust into new roles, particularly related to caregiving and nurturing (Aneshensel, Pearlin, Mullan, Zarit, & Whitlatch, 1995). Also, older men have, as of late, received great attention with respect to health and lifestyle issues. For example, this group has been targeted with unprecedented fervor by ads for Viagra and awareness of prostate cancer as well as other issues, products, and services. A downturn in their attitudes may be related to difficulty adjusting to these new expectations and attention. While women are accustomed to these roles and focus, men may need more time to adjust. Perhaps a reversal in older males' attitudes on these scales could be seen given enough time.

Conclusions

The forces impacting older adults are many, complex, and changing. In 1993, Gray confirmed the direct and indirect influence of at least 12 different variables on the attitudes of older adults toward mental health services. Clearly, it will be difficult to predict the nature of attitudes the next cohort of older adults will have. For now we are left to draw the conclusion that, like those of the general population, older adults' attitudes

toward mental health services remain generally positive. Still, not all dimensions of the attitudes of these samples were equally positive. Furthermore, the momentum of positive change previously seen has dissipated. It is hoped that negative attitudes will not long continue to serve as a barrier to those in need. Were all older adults in need of mental health care open and willing to ask for it, then dealing with the problem of demand outstripping supply would be a wonderful problem for those in the mental health care field to solve. Unfortunately, negative attitudes and other barriers will continue to challenge our field for the foreseeable future.

Education efforts about mental health services are needed, with particular focus placed on the benefits of mental health care for areas such as adjustment issues, spirituality, behavioral health, and interpersonal conflicts. Also, education is needed to inform older adults about what is involved in mental health treatment and how to obtain it. Based on the current findings, older men should be particularly targeted by these efforts. Education initiatives can be expected to be fruitful as previous programs have proven effective in numerous settings (Farberman, 1997; Madianos et al. 1999; Paykel, Hart, &

Priest, 1998). Janda et al. (1998) suggest that education campaigns emphasizing the scientific accomplishments of psychology may be most successful.

Several limitations of this study should be noted. Due to the voluntary nature of this research and the length of the survey itself, those completing the survey are expected to have a positive bias. Also, the samples were comprised of mostly white participants. Cultural differences in attitude and knowledge have been seen in other research. For example, Euro American women appear to hold beliefs about the etiology of mental illness more consistent with mental health professionals than do Latinas or African American women (Alvidrez, 1999). Thus, generalization to other populations is questionable. Additional research may help correct for the effect of positively biased samples and increase the generalizability of these findings. Isolated violations of assumptions of homogeneity of variance may call into question these results. However, according to Winer (1971), analysis of variance is a robust procedure and is not threatened by moderate violations. Furthermore, when effect sizes are large, a violation of homogeneity of variance is unimportant (Keppel, 1991). Overlap among the samples in date of birth of the

participants was not an important limitation as results were essentially the same when the data were analyzed with all overlapping cases removed. The cross-sectional nature of this study leaves unanswered the question of intrapersonal change in attitude. Longitudinal designs in subsequent investigations may add insight to this important area.

Efforts to predict future attitudes can only be helped by a better understanding of past attitudinal patterns. Unfortunately, data for younger adults in 1977 was not collected. It is difficult, then, to determine how the attitudes of older adults prior to 1991 compared to younger adults and if the differences seen between 1977 and 1991 were unique to older adults. Perhaps archival research could investigate the relative differences in older and younger adults with respect to attitude in order to answer this question.

Another unanswered question relates to determining what experiences are sufficient to differentiate cohorts such that shifts in mental health attitudes can be clearly explained (see Rosow, 1978). Similarly, how much separation in time between samples is needed to appreciate differences in attitude? Clearly, dramatic differences were noted after

the 14-year period between 1977 and 1991, whereas the 9-year span between those sampled in 1991 and 2000 did not show a similar result. The data from this study provide snapshots of the state of attitudes among adults toward mental health services at a given time. It is not known if and to what degree attitude differences existed between the times data were collected from each sample. Because it is not clear how or when recent events have impacted adults, attitudes could have continued to improve following the 1991 sample before declining to their current point. Conversely, a peak in attitude may have occurred prior to the 1991 sample. However, these possibilities are only speculative.

Looking ahead, it will be important to consider the role of Internet technology in shaping the attitudes of older adults over the next 20 years. Will cyber-therapy offer otherwise reluctant adults the perception of privacy they want in order to seek treatment? How important will the Internet be in educating the public about different aspects of mental health? Clearly, the next two decades will be an exciting time for mental health care providers to older adults. We are poised to witness the coming

together of 20th-century attitudes and 21st-century technology among a booming population of needy adults.

Whatever the attitudes of older adults in years to come, it is likely that a dual set of challenges will face the mental health care field. There may at once be greater demand by increasing numbers of older adults willing to seek mental health services and at the same time a growing group of older adults missing out on much needed care as a result of attitudinal and other barriers. In order to address these issues, mental health research, training, reimbursement, education, and delivery initiatives for older adults are needed. For now, it appears that the dismal relationship between older adults and the mental health system described by researchers over the past two decades (Blank, 1977; Deane & Todd, 1996; Lasoski, 1986; Lundervold & Young, 1992; Ray et al., 1992; Shapiro, 1986) has improved. Still the lack of positive change during the 1990s is cause for concern. It should serve as a signal for mental health care professionals and organizations to refocus.

APPENDIX A

QUESTIONNAIRE

Demographics

Please do not put your name on this questionnaire. All information is anonymous and confidential. Please try to respond to every question.

1. Your age: _____ years
2. Your sex: (check one) _____ (1) Male _____ (2) Female
3. Present Marital Status (check one):
_____ (1) Married_____ (2) Widowed_____ (3) Single
_____ (4) Divorced_____ (5) Separated
4. How long have you held your present marital status?
_____ years.
5. Where do you live? (check one)
_____ (1) My own home
_____ (2) Rented apartment or rented house
_____ (3) With children or relatives
_____ (4) Other (please explain)
_____
6. Do you live alone? _____ (1) Yes _____ (2) No
7. Highest level of school completed (check one)
_____ (1) None or some grade school (last grade completed)
_____ (2) Completed grade school (grade 8)
_____ (3) Some high school (specify last grade completed)
_____ (4) Completed high school
_____ (5) Some college, but didn't graduate
_____ (6) Graduated from college
_____ (7) Some work toward master's degree
_____ (8) Completed master's degree
_____ (9) Some work toward doctorate or professional degree
_____ (10) Completed doctoral or professional degree
8. Are you retired? _____ (1) Yes _____ (2) No
9. If retired, how long have you been retired? _____ years
10. In general, how is your health relative to persons of your age? check one:
___ (1)Excellent ___ (2) Good ___ (3) Fair ___ (4) Poor ___
11. Do you take any medication? (prescribed drugs/medicine)
_____ (1) Yes _____ (2) No
12. Counting what you and your spouse get from all sources, what was you total income last year?
_____ (1) Under $3000
_____ (2) $3000-$3999
_____ (3) $4000-$4999
_____ (4) $5000-$5999
_____ (5) $6000-$6999

_____ (6) $7000-$7999
_____ (7) $8000-$9999
_____ (8) $10000-$14999
_____ (9) $15000-$19999
_____ (10) $20000-$24999
_____ (11) $25000 or over

13. Have you ever sought professional help for an emotional/mental problem of a personal nature?

_____ (1) Yes _____ (2) No

Openness

For the following problems would you seek the help of a counselor or therapist? (Circle 1 for "yes" or 2 for "no")

	Yes	No
14. Deep depression	1	2
15. Feelings of loneliness	1	2
16. Unidentifiable fear or anxiety	1	2
17. Fear of death	1	2
18. Fear of dying	1	2
19. Fear of spouse's death	1	2
20. Fear of spouse's dying	1	2
21. Arguments with spouse	1	2
22. Nervousness	1	2
23. Nervous breakdown	1	2
24. Trouble sleeping	1	2
25. Poor appetite	1	2
26. Seeing or hearing things	1	2
27. Not being "in touch with reality"	1	2
28. Blurred vision	1	2
29. Forgetfulness	1	2
30. Ringing in the ears	1	2
31. General aches and pains	1	2
32. Chest pains	1	2
33. Arguments with friends	1	2
34. Confusion	1	2
35. Preoccupation with the past	1	2
36. Looking forward to death	1	2
37. Arguments with children	1	2

Biases

For each of the following statements indicate whether you (1) strongly disagree, (2) disagree, (3) are undecided, (4) agree, or (5) strongly agree. Please circle only one alternative for each question.

38.	Psychotherapists and counselors only work with persons who are mentally ill or crazy.	1	2	3	4	5
39.	If a member of my family found out I was being cared for by a counselor or therapist, it would bother me a great deal.	1	2	3	4	5
40.	If I went to see a counselor, people would think I was crazy.	1	2	3	4	5
41.	A physician or medical doctor is best qualified to help an older person with an emotional or mental problem.	1	2	3	4	5
41.	An older, mature adult should be able to handle any problems he has without any outside help.	1	2	3	4	5
42.	A minister or pastor is best qualified to help an older person with an emotional or mental problem.	1	2	3	4	5
44.	Counseling/therapy is a waste of time.	1	2	3	4	5
45.	The attitudes of the staff in most counseling centers are negative and demeaning toward most older people.	1	2	3	4	5
46.	If someone is a true Christian, he doesn't need a psychologist.	1	2	3	4	5
47.	I would not go to see a counselor because I am afraid to go out on the streets for fear of getting mugged or attacked.	1	2	3	4	5

Range

In your opinion, do you think the following things that sometimes happen to people create a problem that could be helped by seeing a professional counselor or therapist? (Circle 1 for "yes" or 2 for "no")

		Yes	No
48.	Death of husband or wife	1	2
49.	Death of one's child	1	2
50.	Retirement (voluntary)	1	2
51.	Unemployment	1	2
52.	Major illness or injury (e.g. broken hip, diabetes, cancer, stroke, heart attack)	1	2
53.	Being moved from one's home to a nursing home	1	2
53.	Being discriminated against on the basis of your age	1	2
55.	Not having access to transportation	1	2
56.	Living on a fixed income	1	2
57.	Having to accept social services (e.g. home-delivered meals, food stamps, Medicaid, home health care)	1	2
58.	Loss of appetite	1	2
59.	Children leaving home	1	2
60.	Being alone	1	2
61.	Lack of respect from younger people	1	2
62.	Having difficulty in finding a comfortable place to live	1	2
63.	Things being different than in the past	1	2
64.	Normal aging changes (that is, lessened ability to see clearly, cataracts, hearing loss)	1	2
65.	Being isolated from one's family	1	2
66.	Retirement (involuntary)	1	2
67.	Being rejected by one's family	1	2
68.	Sexual difficulties	1	2
69.	Major surgery	1	2
70.	Terminal illness (cancer, heart disease)	1	2
71.	Having a problems with drugs/alcohol, prescription medication	1	2
72.	Problems with side effects of prescription medication	1	2
73.	Divorce or separation	1	2

74.	Marriage	1	2
75.	Death of a close friend	1	2
76.	Loss of affiliation with one's church-a change in church activities	1	2
77.	Spouse's unemployment	1	2
78.	Returning to school (taking classes or returning to high school or college)	1	2
79.	Gain or loss of weight	1	2
80.	Holidays (e.g. Christmas, Thanksgiving)	1	2
81.	Change in sleeping habits	1	2
82.	Spouse's suicide	1	2

Breadth

For each of the following statements indicate whether you (1) strongly disagree, (2) disagree, (3) are undecided, (4) agree, or (5) strongly agree. Please circle only one alternative for each question.

83.	A great deal of mentally disturbed behavior can be accounted for by poisonous substances that are in our food or in the air.	1	2	3	4	5
84.	Most mentally or emotionally disturbed people learned to act in ways that are crazy or insane.	1	2	3	4	5
85.	Most mentally ill/emotionally disturbed people really feel inferior to others.	1	2	3	4	5
85.	Mental or emotional problems are inherited.	1	2	3	4	5
86.	Mental problems are more than likely caused by brain damage.	1	2	3	4	5
87.	Mental problems are a function of one's Not having basic needs (hunger, thirst, sex) met.	1	2	3	4	5
89.	Mental problems are the result of having certain "traits" that bring about disturbed behaviors.	1	2	3	4	5
90.	Mental/emotional problems result from one's "body type" or physique which is present at birth.	1	2	3	4	5
91.	Almost all mental problems in older persons are caused by their being forced to move away form their homes--to live with relatives or in a nursing home.	1	2	3	4	5
92.	Almost all mental problems in older persons are caused by the way they are treated by society.	1	2	3	4	5

Seeking Attitudes

Below are a number of statements pertaining to psychology and mental health issues. Read each statement carefully and indicate you agreement, probable agreement, probable disagreement, or disagreement. Please express your frank opinion in rating the statements. There are no "wrong" answers, and the only right ones are whatever you honestly feel or believe. It is important that you answer every item.

For each of the following statements indicate whether you (1) strongly disagree, (2) probably disagree, (3) probably agree, or (4) strongly agree. Please circle only one alternative for each question.

93.	Although there are clinics for people with mental troubles, I would not have much faith in them.	1	2	3	4
94.	If a good friend asked my advice about a mental problem I might recommend that he see a psychiatrist.	1	2	3	4
95.	I would feel uneasy going to a psychiatrist because of what some people would think.	1	2	3	4
96.	A person with a strong character can get over mental conflicts by himself, and would have little need of a psychiatrist.	1	2	3	4
97.	There are times when I have felt completely lost and would have welcomed professional advice for a personal or emotional problem.	1	2	3	4
98.	Considering the time and expense involved in psychotherapy, it would have doubtful value for a person like me.	1	2	3	4
99.	I would willingly confide intimate matters to an appropriate person if I thought it might help me or a member of my family.	1	2	3	4
100.	I would rather live with certain mental conflicts than go through the ordeal of getting psychiatric treatment.	1	2	3	4
101.	Emotional difficulties, like many things, tend to work out by themselves.	1	2	3	4
102.	There are certain problems which should not be discussed outside of one's immediate family.	1	2	3	4

103.	A person with a serious emotional disturbance would probably feel most secure in a good mental hospital.	1	2	3	4
104.	If I believed I was having a mental breakdown, my first inclination would be to get professional attention.	1	2	3	4
105.	Keeping one's mind on a job is a good solution for avoiding personal worries and concerns.	1	2	3	4
106.	Having been a psychiatric patient is a blot on a person's life.	1	2	3	4
107.	I would rather be advised by a close friend than by a psychologist, even for an emotional problem.	1	2	3	4
108.	A person with an emotional problem is not likely to solve it alone; he is likely to solve it with professional help.	1	2	3	4
109.	I resent a person – professionally trained or not -- who wants to know about my personal difficulties.	1	2	3	4
110.	I would want to get psychiatric attention if I was worried or upset for a long period of time.	1	2	3	4
111.	The idea of talking about my problems with a psychologist strikes my as a poor way to get rid of emotional conflicts.	1	2	3	4
112.	Having been mentally ill carries with it a burden of shame.	1	2	3	4
113.	There are experiences in my life I would not discuss with anyone.	1	2	3	4
114.	It is probably best not to know everything about oneself.	1	2	3	4
115.	If I were experiencing a serious emotional crisis at this pint in my life, I would be confident that I could find relief in psychotherapy.	1	2	3	4
116.	There is something admirable in the attitude of a person who is willing to cope with his conflicts and fears without resorting to professional help.	1	2	3	4
117.	At some future time I might want to have psychological counseling.	1	2	3	4
118.	A person should work out his own problems; getting psychological counseling would be				

	a last resort.	1	2	3	4
119.	Had I received treatment in a mental hospital, I would not feel that it ought to be “covered up.”	1	2	3	4
120.	If I thought I needed psychiatric help, I would get it no matter who knew about it.	1	2	3	4
121.	It is difficult to talk about personal affairs with highly educated people such as doctors, teachers, and clergymen.	1	2	3	4

APPENDIX B

TABLES AND FIGURES

Table 1

Demographic Data - Analysis 1

		1977 Sample	1991 Sample	2000 Sample
N		90	101	99
Age	(M years)	70.22	70.81	69.83
	(SD years)	6.48	4.22	4.95
Education (M)[a]		4.21	5.45	5.36
Health (M)[b]		2.40	3.09	3.33
Income (M)[c]		5.26	9.30	9.07
Previous Use of Mental Health Services (N)	Yes	10 (11.1%)	29 (28.7%)	33 (33.3%)
	No	80 (88.9%)	72 (71.3%)	66 (66.7%)

Note. [a]1 = None or some grade school; 2 = Completed grade 8; 3 = Some high school; 4 = Completed high school; 5 = Some college, but didn't graduate; 6 = Graduated from college; 7 = Some work toward master's degree; 8 = Completed master's degree; 9 = Some doctoral or professional degree; 10 = Completed doctoral or professional degree. [b]1 = Poor; 2 = Fair; 3 = Good; 4 = Excellent. [c]1 = Under $3,000; 2 = $3,000 - $3,999; 3 = $4,000 - $4,999; 4 = $5,000 - $5,999; 5 = $6,000 - $6,999; 6 = $7,000 - $7,999; 7 = $8,000 - $9,999; 8 = $10,000 - $14,999; 9 = $15,000 - $19,999; 10 = $20,000 - $24,999; 11 = $25,000 or over.

Table 2

Correlations Among Dependent Variables and Previous Use of Mental Health Services for the 1977 Sample – Analysis 1

Variable	PRE	OPE	BIA	RAN	BRE
PRE	--				
OPE	-.12	--			
BIA	.08	.05	--		
RAN	.03	.55**	-.06	--	
BRE	-.19	.04	-.25*	-.07	--

Note. *p<.05, **p<.01, PRE = Previous Use of Mental Health Services, BRE = Breadth, RAN = Range of Knowledge, OPE = Openness, BIA = Biases

Table 3

Correlations Among Dependent Variables and Previous Use of Mental Health Services for the 1991 Sample – Analysis 1

Variable	PRE	OPE	BIA	RAN	BRE
PRE	--				
OPE	.15	--			
BIA	.30**	.29**	--		
RAN	.12	.48**	.13	--	
BRE	.04	.01	.38**	-.11	--

Note. **p<.01, PRE = Previous Use of Mental Health Services, BRE = Breadth, RAN = Range of Knowledge, OPE = Openness, BIA = Biases

Table 4

Correlations Among Dependent Variables and Previous Use of Mental Health Services for the 2000 Sample – Analysis 1

Variable	PRE	OPE	BIA	RAN	BRE
PRE	--				
OPE	.16	--			
BIA	.26**	.33**	--		
RAN	.09	.48**	.25*	--	
BRE	.08	.13	.63**	.04	--

Note. *p<.05, **p<.01, PRE = Previous Use of Mental Health Services, BRE = Breadth, RAN = Range of Knowledge, OPE = Openness, BIA = Biases

Table 5

Reliability Analyses for Attitude Scales - Analysis 1

	Alpha		
Scale	1977 Sample	1991 Sample	2000 Sample
Openness	.84	.86	.87
Biases	.77	.71	.84
Range of Knowledge	.87	.92	.93
Breadth	.74	.78	.80

Table 6

Observed Means and Standard Deviations - Analysis 1

	Attitude Scales							
	Openness		Biases		Range of Knowledge		Breadth	
Group	M	SD	M	SD	M	SD	M	SD
Cohort								
1977	6.57	4.48	38.22	4.82	8.68	5.85	28.31	5.25
1991	9.72	5.11	39.97	4.11	17.32	7.83	35.39	4.87
2000	9.63	4.91	39.46	5.64	16.03	8.37	35.01	5.53
Gender								
Male	8.20	5.15	37.05	4.91	13.12	8.12	31.61	5.53
Female	8.92	5.00	40.17	4.65	14.64	8.41	33.66	6.24
Cohort X Gender								
1977								
Male	6.17	3.73	37.69	5.20	9.03	5.75	28.28	5.60
Female	6.75	4.82	38.48	4.64	8.51	5.94	28.33	5.13
1991								
Male	10.00	5.63	37.55	3.56	17.10	7.30	34.93	3.98
Female	9.61	4.92	40.94	3.94	17.40	8.08	35.57	5.19
2000								
Male	8.44	5.33	35.81	5.71	13.22	9.16	31.63	4.82
Female	10.07	4.71	40.83	5.00	17.08	7.86	36.28	5.27

Table 7

Tukey HSD Post Hoc Analysis - Analysis 1

	Comparison					
	1977/1991		1977/2000		1991/2000	
Scale	Means	p	Means	p	Means	p
Openness	6.57/9.72	<.001	6.57/9.63	<.001	9.72/9.63	.989
Biases	38.22/39.97	.026	38.22/39.46	.158	39.97/39.46	.722
Range of Knowledge	8.68/17.32	<.001	8.68/16.03	<.001	17.32/16.03	.440
Breadth	28.31/35.39	<.001	28.31/35.01	<.001	35.39/35.01	.861

Table 8

Demographic Data - Analysis 2

Year		1991		2000	
Age group		Younger	Older	Younger	Older
N		131	93	147	91
Age	(M years)	21.14	73.77	20.62	69.37
	(SD years)	3.85	5.21	2.12	4.71
Education (M)[a]		4.81	5.63	4.77	5.39
Health (M)[b]		3.30	3.09	3.32	3.31
Income (M)[c]		4.12	8.89	5.11	9.14
Previous Use Of					
Mental Health	Yes	42 (32.1%)	21 (22.6%)	55 (37.4%)	31 (34.1%)
Services (N)	No	89 (67.9%)	72 (77.4%)	92 (62.6%)	60 (65.9%)

Note. [a]1 = None or some grade school; 2 = Completed grade 8; 3 = Some high school; 4 = Completed high school; 5 = Some college, but didn't graduate; 6 = Graduated from college; 7 = Some work toward master's degree; 8 = Completed master's degree; 9 = Some doctoral or professional degree; 10 = Completed doctoral or professional degree. [b]1 = Poor; 2 = Fair; 3 = Good; 4 = Excellent. [c]1 = Under $3,000; 2 = $3,000 - $3,999; 3 = $4,000 - $4,999; 4 = $5,000 - $5,999; 5 = $6,000 - $6,999; 6 = $7,000 - $7,999; 7 = $8,000 - $9,999; 8 = $10,000 - $14,999; 9 = $15,000 - $19,999; 10 = $20,000 - $24,999; 11 = $25,000 or over.

Table 9

Correlations Among Dependent Variables and Previous Use of Mental Health Services for the 1991 Younger Sample - Analysis 2

Variable	PRE	OPE	BIA	RAN	BRE
PRE	--				
OPE	.28**	--			
BIA	.30**	.40**	--		
RAN	.23**	.54**	.39**	--	
BRE	.13	.02	.19*	.07	--
ATT	.30**	.48**	.79**	.38**	.18*

Note. *p<.05, **p<.01, PRE = Previous Use of Mental Health Services, BRE = Breadth, RAN = Range of Knowledge, OPE = Openness, BIA = Biases, ATT = Help Seeking Attitudes

Table 10

Correlations Among Dependent Variables and Previous Use of Mental Health Services for the 1991 Older Sample - Analysis 2

Variable	PRE	OPE	BIA	RAN	BRE
PRE	--				
OPE	.11	--			
BIA	.31**	.26*	--		
RAN	.08	.48**	.10	--	
BRE	.03	-.03	.37**	-.15	--
ATT	.24**	.40**	.74**	.14	.14

Note. *p<.05, **p<.01, PRE = Previous Use of Mental Health Services, BRE = Breadth, RAN = Range of Knowledge, OPE = Openness, BIA = Biases, ATT = Help Seeking Attitudes

Table 11

Correlations Among Dependent Variables and Previous Use of Mental Health Services for the 2000 Younger Sample - Analysis 2

Variable	PRE	OPE	BIA	RAN	BRE
PRE	--				
OPE	.22**	--			
BIA	.21**	-.03	--		
RAN	.06	.34**	.20*	--	
BRE	.04	-.04	.33**	.07	--
ATT	.36**	.25**	.48**	.33**	.15

Note. *p<.05, **p<.01, PRE = Previous Use of Mental Health Services, BRE = Breadth, RAN = Range of Knowledge, OPE = Openness, BIA = Biases, ATT = Help Seeking Attitudes

Table 12

Correlations Among Dependent Variables and Previous Use of Mental Health Services for the 2000 Older Sample - Analysis 2

Variable	PRE	OPE	BIA	RAN	BRE
PRE	--				
OPE	.15	--			
BIA	.23*	.32**	--		
RAN	.09	.50**	.24*	--	
BRE	.08	.13	.65**	.06	--
ATT	.23*	.39**	.61**	.28**	.38**

Note. *p<.05, **p<.01, PRE = Previous Use of Mental Health Services, BRE = Breadth, RAN = Range of Knowledge, OPE = Openness, BIA = Biases, ATT = Help Seeking Attitudes

Table 13

Reliability Analyses for Attitude Scales - Analysis 2

	Alpha			
Sample	1991		2000	
Age group	Younger	Older	Younger	Older
Scale				
Openness	.81	.87	.85	.87
Biases	.80	.67	.78	.84
Range of Knowledge	.91	.92	.92	.93
Breadth	.69	.77	.63	.81
Help Seeking Attitudes	.87	.90	.87	.85

Table 14

Observed Means and Standard Deviations - Analysis 2

	Attitude Scales									
	Openness		Biases		Range of Knowledge		Breadth		Attitude	
Group	M	SD	M	SD	M	SD	M	SD	M	SD
Cohort										
1991	9.40	4.82	40.46	4.80	18.26	7.79	33.64	4.90	84.28	12.24
2000	10.05	4.89	39.53	5.31	18.44	8.17	33.76	4.92	81.16	11.08
Age										
Younger	9.82	4.65	40.30	5.16	19.65	7.61	32.84	4.41	82.04	11.35
Older	9.61	5.19	39.50	4.93	16.38	8.14	35.00	5.32	83.63	12.30
Gender										
Male	9.22	5.23	37.65	5.54	16.99	8.00	33.32	4.63	77.65	10.72
Female	9.94	4.70	40.91	4.58	18.89	7.92	33.85	5.01	84.66	11.56
Cohort X Age										
1991										
Younger	9.41	4.38	41.15	5.17	19.53	7.35	32.70	4.69	83.98	11.35
Older	9.39	5.40	39.51	4.05	16.47	8.07	34.96	4.91	84.71	13.44

2000										
Younger	10.19	4.85	39.55	5.06	19.77	7.86	32.96	4.16	80.31	11.10
Older	9.84	4.98	39.49	5.72	16.29	8.25	35.04	5.74	82.53	10.97
Cohort X Gender										
1991										
Male	8.99	4.92	38.80	4.70	17.17	7.31	33.93	4.61	80.22	11.72
Female	9.59	4.78	41.21	4.67	18.74	7.97	33.51	5.04	86.01	12.06
2000										
Male	9.48	5.58	36.37	6.14	16.79	8.76	32.65	4.60	74.79	8.70
Female	10.26	4.63	40.64	4.50	19.02	7.90	34.15	4.98	83.40	10.98
Age X Gender										
Younger										
Male	9.47	5.02	38.39	5.95	18.34	7.37	33.49	4.71	77.78	10.24
Female	9.96	4.50	41.02	4.65	20.15	7.66	32.59	4.28	83.64	11.35
Older										
Male	8.87	5.53	36.62	4.78	15.13	8.52	33.09	4.54	77.46	11.44
Female	9.92	5.02	40.73	4.48	16.91	7.94	35.81	5.44	86.26	11.74
Cohort X Age X Gender										
1991										

Younger										
Male	8.70	4.32	39.78	5.20	17.65	6.99	33.43	5.09	81.43	10.92
Female	9.73	4.40	41.75	5.07	20.35	7.39	32.38	4.50	85.10	11.41
Older										
Male	9.38	5.71	37.45	3.56	16.52	7.81	34.63	3.81	78.55	12.76
Female	9.39	5.30	40.44	3.93	16.45	8.25	35.11	5.36	87.50	12.89
2000										
Younger										
Male	10.33	5.64	36.86	6.41	19.11	7.80	33.56	4.33	73.73	7.74
Female	10.14	4.60	40.42	4.21	19.98	7.91	32.77	4.10	82.45	11.22
Older										
Male	8.31	5.39	35.69	5.79	13.58	9.15	31.38	4.74	76.25	9.86
Female	10.45	4.71	41.02	4.97	17.37	7.67	36.51	5.47	85.04	10.44

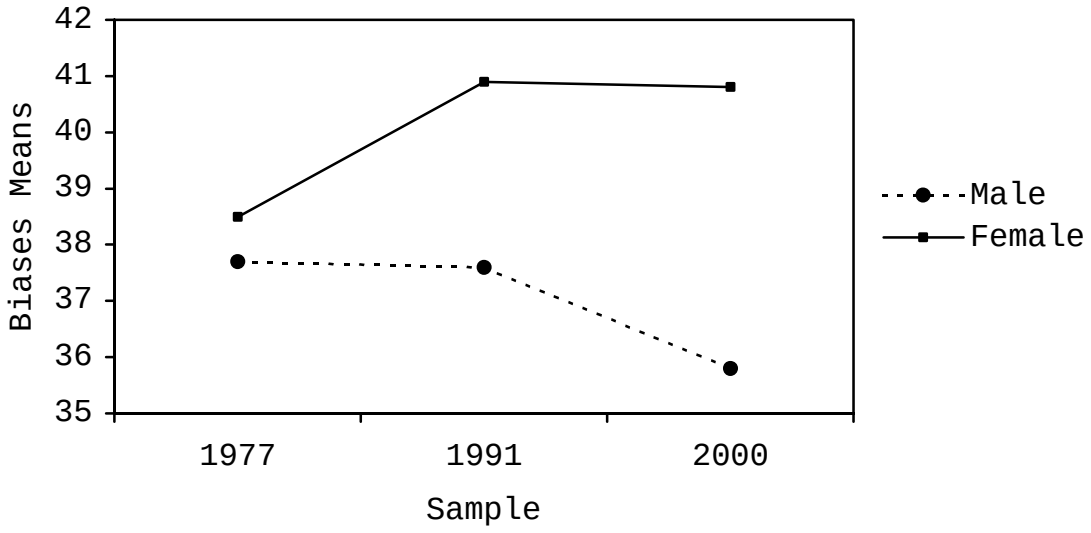

Figure 1. Analysis 1 Cohort X Gender interaction for Biases.

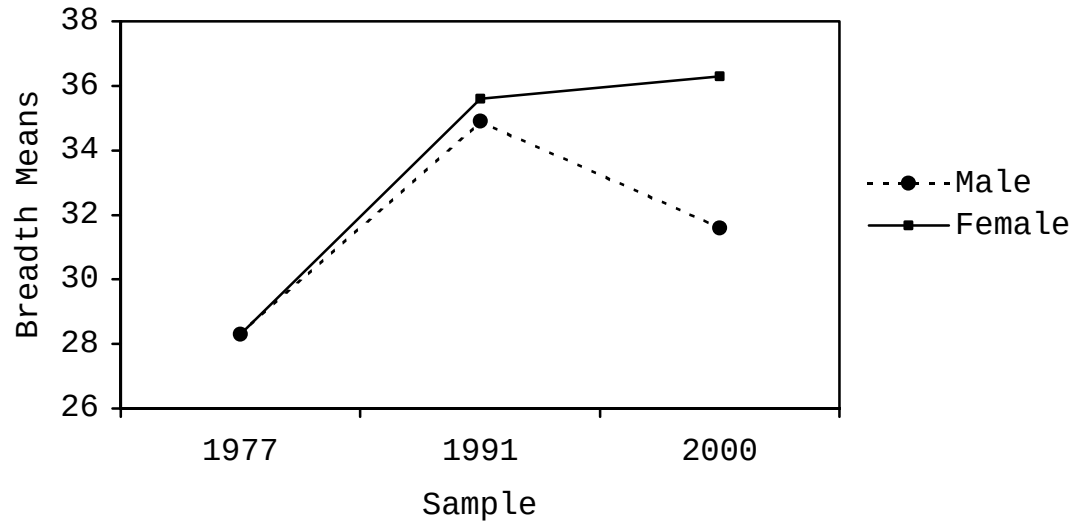

Figure 2. Analysis 1 Cohort X Gender interaction for Breadth.

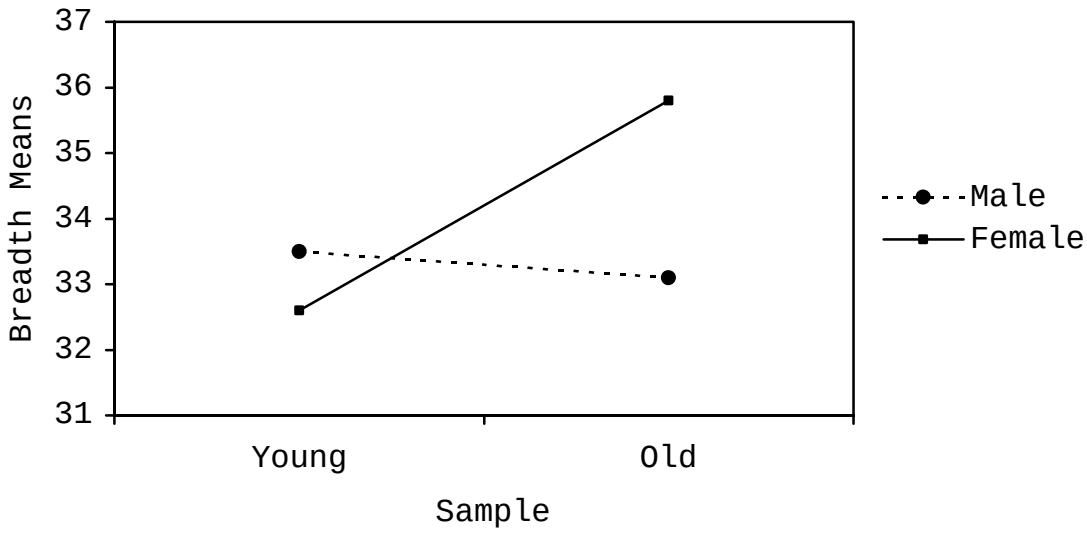

Figure 3. Analysis 2 Age X Gender interaction for Breadth.

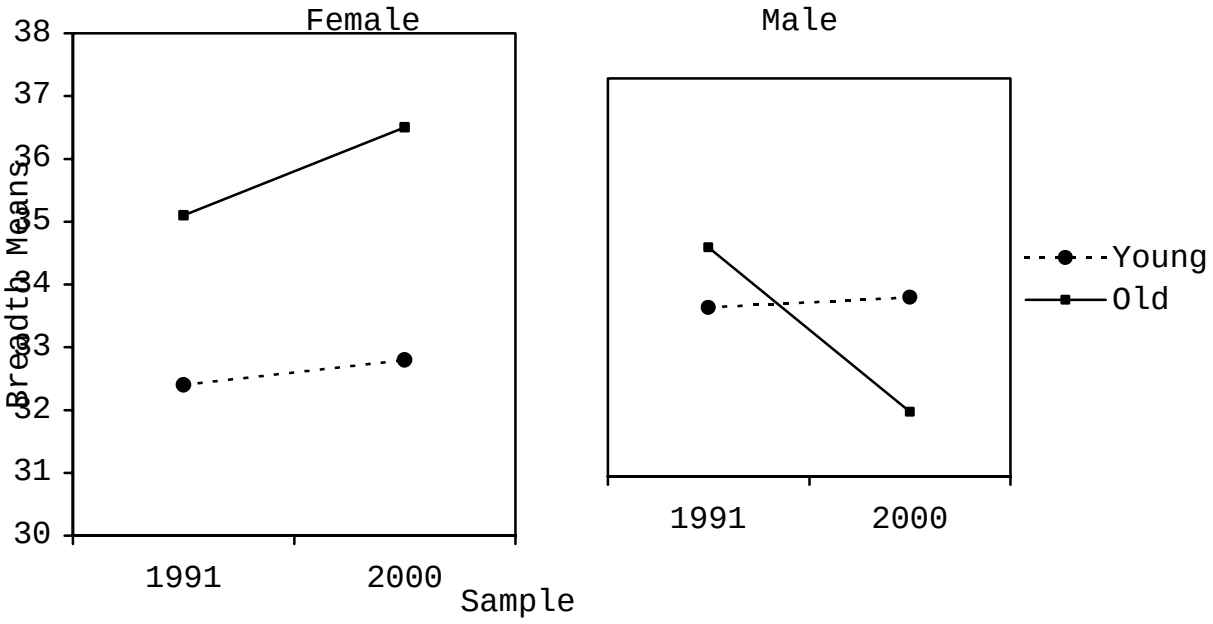

Figure 4. Analysis 2 Cohort X Age X Gender interaction for Breadth.

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